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Vol. 3



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A  
SYSTEMATIC ARRANGEMENT  
OF  
**BRITISH PLANTS;**

WITH AN EASY  
INTRODUCTION TO THE STUDY OF BOTANY.  
ILLUSTRATED BY COPPER PLATES.

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BY WILLIAM WITHERING, M.D. F.R.S.

Member of the Royal Academy of Sciences at Lisbon; Fellow of the Linnean Society; Honorary Member of the Royal Medical Society at Edinburgh, &c.

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THE FIFTH EDITION,

IN FOUR VOLUMES:

CORRECTED AND CONSIDERABLY ENLARGED

BY WILLIAM WITHERING, ESQ.

Late of the Universities of Glasgow and Edinburgh; Extraordinary Member of the Royal Medical Society; Fellow of the Linnean Society, &c.

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*"Primus gradus sapientiæ est res ipsas nosse."* LINN.

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*"Increscunt quotannis Scientia, emendantur quotidie, et ad fastigium sursum optatum sensim sensimque, plurimum virorum opera et studio junctis, feliciter properant."* THUNBERG.

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VOL. III.

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1812.

SYSTEMATIC ARRANGEMENT  
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INTRODUCTION TO THE STUDY OF BOTANY  
ILLUSTRATED BY COOPER & CO.

BY WILLIAM BATHURST, M.A., F.R.S.

Second Edition, revised and enlarged. London: J. & A. Churchill, 1887.

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This book is intended to be used as a text-book for the study of  
Botany in the Schools and Universities, and as a guide to the  
study of the British Flora.

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CLASS XII.

ICOSANDRIA.

MONOGYNIA.

PRU'NUS. *Cal.* beneath, 5-cleft : *Bloss.* 5 petals: *Drupa*  
with an entire nut.

[*Cratægus.*]

DIGYNIA.

CRATÆ'GUS. *Cal.* superior, 5-cleft : *Bloss.* 5 petals:  
*Berry* with 2 seeds.

[*Prunus insitia.*]

TRIGYNIA.

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PENTAGYNIA.

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PY'RUS. *Cal.* superior, 5-cleft : *Bloss.* 5 petals: *Fruit* a  
*Pomum*, with 5 cells and many seeds.

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many, crowded together.

POLYGYNIA.

RO'SA. *Cal.* 5-cleft : *Bloss.* 5 petals: *Cup* like a berry,  
with many seeds.

RU'BUS. *Cal.* 5-cleft: *Bloss.* 5 petals: *Berry* com-  
pound.

TORMENTIL'LA. *Cal.* 8-cleft : *Bloss.* 4 petals : *Seeds* 8, awnless.

DRY'AS. *Cal.* 5 to 10-cleft : *Bloss.* 5 to 8 petals : *Seeds* many, with woolly awns.

FRAGA'RIA. *Cal.* 10-cleft ; *Bloss.* 5 petals : *Seeds* many, deciduous, situated upon a receptacle resembling a berry.

POTENTIL'LA. *Cal.* 10-cleft : *Bloss.* 5 petals : *Seeds* many, awnless.

GE'UM. *Cal.* 10-cleft : *Bloss.* 5 petals : *Seeds* many, with a knee-jointed awn.

CO'MARUM. *Cal.* 10-cleft : *Bloss.* 5 petals : *Seeds* many, permanent, upon a fleshy receptacle.

[*Spiræa. Sempervivum tectorum.*]

## MONOGYNIA.

PRU'NUS. *Calyx* 5-cleft ; beneath : *petals* 5 : *drupa* 1-celled, closed at the top : *nut* with projecting seams.

Pa'dus.

P. Flowers in bunches ; leaves deciduous, with 2 glands at the base on the under side.

*E. bot.* 1383—*Fl. dan.* 205—*Ger.* 1322. 9—*Dod.* 777. 1—*Ger. em.* 1504. 9—*J. B. i. a.* 228—*Lob. obs.* 593. 2—*Park.* 1517. 3.

*Bunches* from below the leaves. *Petals* serrated, not nicked as in *P. Cerasus*. LINN. *Calyx* finely serrated ; within at the bottom beset with numerous woolly hairs. *Petals* finely serrated. *Stamens* 25. (*Leaves* alternate, on leaf-stalks, inversely-egg-shaped, sharp pointed, serrated, veined, smooth, slightly glaucous, smelling somewhat like Rue. *Bunches* solitary, simple, nodding, many-flowered, leafy at the base. *Flowers* white. *Fruit* black, nauseous. *Fl. Brit.* Stone of the *drupa* rugged, answering to the character of *Amygdalus*, not smooth as it ought to be in *Prunus* ; thus confirming the assertion of Gärtner, that no solid character exists between these two genera. *E. bot.* E.)



*Bird Cherry. Wild Cluster Cherry.* Woods and hedges in the Northern counties. In a lane between Temple Mills and Epping Forest. [About Ingleborough, Yorkshire. CURTIS.—Woods in Norfolk, common. Mr. WOODWARD.—Hedges at Pendeford, Stafford. Mr. PITT.—Woods by the Tees. Mr. ROBSON.—A few miles North of Manchester, very common in woods and hedges. Mr. CALEY.] S. May.\*

P. Umbels mostly on short fruit-stalks: leaves egg-spear-shaped, smooth, doubled together. *Cérasua.*

*E. bot.* 706—*Sheldr.* 54. 1 and 6—*Hunt. eval.* 188. 1. p. 181. ed. ii.—*Blackw.* 449—*Matth.* 233, and 235—*Dod.* 808. 1—*Ger.* 1502. 1—*Ger.* 1319. 1—*Fuchs.* 425—*J. B. i. a.* 220—*Trag.* 1026—*Lonic. i.* 13. 2.

*Leaf-scales* toothed. *Floral-leaves* 3-cleft, serrated; the intermediate one leafy. The terminating *buds* producing leaves, the lateral ones flowers, which are from the last year's shoots. *Blossoms* white. *Fruit* red. LINN. (*Leaves* on leaf-stalks, sharp-pointed, unequally serrated, veined; the younger ones more or less pubescent. *Calyx* reflexed. *Fl. Brit. E.*)

*Common Wild Cherry-tree.* Woods and hedges not uncommon; but probably from the stones of the garden varieties dropped by birds. RAY.—[In Hertfordshire, growing to a large size. Mr. WOODWARD.] T. May.†

P. Umbels sitting: leaves egg-spear-shaped, downy underneath, doubled together. *a'vium.*

\* It grows well in woods, groves, or fields, but not in a moist soil. It bears lopping, and suffers the grass to grow under it. The fruit is nauseous: but bruised, and infused in wine or brandy, it gives it an agreeable flavour. A strong decoction of the bark is used by the Finlanders to cure venereal complaints; which practice is corroborated by the testimony of M. Broerland in the Stockh. trans. He directs 6 ounces of the dry, or 8 of the fresh bark, to be boiled in 8 to 4 pints of water. The dose is 4 ounces 4 times a day.—It alone cures the slightest infections, and combined with Mercury facilitates the cure of the severer states of the disease. VENEL. and a decoction of the berries is sometimes given with success in dysentery. The wood being smooth and tough is made into handles for knives and whips. Sheep, goats, and swine eat it. Cows are not fond of it. Horses refuse it.

† It loves a sandy soil, and an elevated situation. The gum that exudes from this tree is equal to gum arabic. Hasselquist relates, that more than 100 men, during a siege, were kept alive for near two months, without any other sustenance than a little of this gum taken into the mouth sometimes, and suffered gradually to dissolve. The common people eat the fruit either fresh or dried, and it is frequently infused in brandy for the sake of its flavour. The wood is hard and tough. It is used by the turner, and is formed into chairs, and stained to imitate mahogany. This tree is the original stock from which many of the cultivated kinds are derived. LINN.

*Ludw.* 108—*Blackw.* 425—*Sheldr.* 54. 5—*Ger.* 1323. 11.

*Leaf-stalks* with 1 or 2 glands towards the end. *Umbel* sitting, 3-flowered. *Flowers* on fruit-stalks, from the shoots of the last year but one. *Involucrum* 4-leaved. LINN.

*Black Cherry-tree.* *Mazzards.* *P. Cerasus*  $\delta$ . *Fl. Brit.* Hedges in Suffolk. RAY. [*Herts.* Mr. WOODWARD.]

T. May.\*

*domestica.* P. Fruit-stalks mostly solitary: leaves spear-egg-shaped, coiled: branches thornless.

*E. bot.* 1783—*Woodv.* 85—*Park.* 1512. 1—*Ger.* 1311. 1—*Matth.* 265—*Lonic.* i. 52. 1—*Fuchs.* 403—*Trag.* 1019—*Dod.* 805—*Lob. obs.* 595. 2—*Ger. em.* 1497. 1.

(A moderate sized tree. E.) *Leaves*, when expanding from the bud, coiled. *Flowering-buds* producing no leaves. LINN. *Calyx* sometimes 6-cleft. *Style* crooked. (*Leaves* on short foot-stalks, serrated, smooth, the younger ones pubescent beneath. *Petals* white, inversely egg-shaped. *Berry* elliptical. *Fl. Brit.* E.)

*Wild Plum-tree.* *Prunus communis domestica.* HUBS. *Prunus gallica*; (the fruit.) *Pharm. Lond.* Hedges, [probably from the fruit of the cultivated varieties accidentally dropped. *Str.*]

T. April.†

*insiti'tia.* P. Fruit-stalks in pairs: leaves egg-shaped, slightly woolly; coiled: branches with thorns.

*E. bot.* 841—(*Blackw.* 305, is a var. of *P. domestica.*)

As large as *P. domestica*. *Branches* reddish brown, smooth, some of them terminating in a thorn. *Stipulae* narrow, fringed, sharp, cloven at the base. Upper surface of the leaves smooth. *Cups* smooth. LINN. *Stipulae* cloven down to the base. *Calyx*, its outer skin may be pulled off, adhering to the fruit-stalk, and appearing like an outer cap. *Flowers* white; larger than those of *P. domestica*. *Style* straight. *Fruit* black; but Mr. Relhan says, sometimes the colour of bee-wax, (or red; which difference in the colour of the fruits have, by some writers, been thought to

\* It grows best in a rich soil on the sides of hills, unmixed with other trees. It bears cropping, and suffers the grass to grow under it. In Hertfordshire there is a cultivated variety, called *Carrons*, which are larger, and much finer flavoured than the common sort. MR. WOODWARD.

† It loves a lofty exposure, and is favourable to pasturage. The varieties have probably originated from the red and white cultivated plum, either sown by design or accident. The cultivated garden plums are derived from this species. The bark dyes yellow.

constitute proper varieties. In our climate this tree does not attain the size of *P. domestica*. Berry roundish. E.)

*Bullace Plumb. Black Bullace Tree.* Hedges. T. April.\*

P. Fruit-stalks solitary; leaves spear-shaped, smooth; spinous branches thorny.

*Fl. dan.* 926—*E. bot.* 842—*Sheldr.* 73—*Woodv.* 84—*Fuchs.* 404—*Trag.* 1016—*J. B. i. a.* 193—*Lonic.* i. 51—*Blackw.* 494—*Matth.* 266—*Dod.* 753. 2—*Lob. obs.* 595. 1—*Ger. em.* 1497. 5—*Park.* 1033—*Ger.* 1313. 1. 2.

*Leaves* spear-egg-shaped, serrated; serratures terminated by an excretory duct, the terminating one blunter and shorter. *Leaf-scales* strap-shaped, between serrated and toothed; the points of the teeth as if dead. LINN. *Styles* sometimes 2. ST. (*Fruit* a black, roundish, austere berry. E.)

*Blackthorn. Sloe-tree. Prunus sylvestris.* (the fruit) Pharm. Lond. Hedges. T. March—April.†

## DIGYNIA.

CRATÆGUS. *Cal.* 5-cleft: *petals* 5: *berry* beneath, opening at the top, 1-celled, one or more seeded.

\* The fruit is acid, but so tempered by a sweetness and roughness as not to be unpleasant, particularly after having been mellowed by frosts. A conserve is prepared by mixing the pulp with thrice its weight of sugar. The bark of the roots and branches is considerably styptic. An infusion of the flowers, sweetened with sugar, is a mild purgative, not improper for children.

† This is not well adapted to grow in hedges, because it spreads its roots wide, and encroaches upon the pasturage; but it makes a good dead fence. The wood is hard and tough, and is formed into teeth for rakes, and walking sticks. From some effects which I have repeatedly observed to follow the prick of the thorns, I have reason to believe there is something poisonous in them, particularly in autumn. The tender leaves dried are sometimes used as a substitute for tea, and is, I believe, the best substitute that has yet been tried. The fruit bruised and put into wine gives it a beautiful red colour, and a pleasant subacid roughness. An infusion of a handful of the flowers is a safe and easy purge. The bark powdered, in doses of two drams, will cure some agues. Letters written upon linen or woollen, with the juice of the fruit, will not wash out. Sheep, goats, and horses eat the leaves. The different species of *Prunus*, furnish nourishment to the *Papilio Cratægi*, *Polychloris*, and *Betule*; *Phalæna quercifolia*, *quercus*, *lanestris*, *cæruleocephala*, *pavonia*, *neustria*, *Oxyacanthæ*, *Citræga*, *prunaria*, and *brumata*; *Aphis padi*; *Curculio cerasi*, and *Pruni*; and *Scarabæus horticola*. (Cotton may be dyed of a rose colour by the juice of wild plumbs, combined with muriatic or sulphuric acid. E.)



A'ria.

C. Leaves egg-shaped, cut, serrated, cottony underneath.

*Fl. dan.* 302—*E. bot.* 1858—*Crantz.* ii. 2. 2—*Mill. ill.*—*Hunt. Evel.* 181. i. p. 175. *ed.* 2d—*J. B.* i. a. 65—*Lob. adv.* 435. 1—*Ger. em.* 1327, 2—*Park.* 1421—*Ger.* 1146. 2.

*Seeds* 4, in each cell 2, like those of the Pear. *CRANTZ.* *Styles* 2 to 4, with as many seeds. *Du Roi.* *Leaves* quite white underneath. *Calyx* woolly. *Petals* scalloped towards the end and woolly at the base. *Fruit* red.

*White-beam Hawthorn. White-beam Tree. Wild Pear Tree. Pyrus Aria.* *Fl. Brit.* (This plant growing on Penmaen Mawr, is the *Afaleur pren*, or *Lemon Tree*, noticed by modern tourists, and so celebrated in Caernarvonshire, but how it could derive a name from any fancied similitude to that exoteric issurprizing. E.) Woods and hedges, especially in mountainous situations and calcareous soil. [Mountainous parts of Derbyshire, from the fissures of the precipices, without any appearance of soil. *Mr. Woodward.*—*Breiddin Hill*, *Salop.* *Mr. Aikin.*—*Wick cliffs*, and on rocks in Leigh wood, opposite the Hot-wells, *Bristol.* *Mr. SWAYNE.*—*In Eden-deane.* *Mr. ROBSON.*]—*Castle Dinas y brân*, near *Llangollen?* *T. May.\**

terminalis. C. Leaves heart-shaped, with 7 angles; lowermost lobes divaricating.

*Jacq. austr.* 443—*Fl. dan.* 798—*Hunt Evel.* 182. i. 176. *ed.* 2d—*E. bot.* 298—*Matth.* 263—*Clus.* i. 10. 2—*Dod.* 803. 2—*Lob. obs.* 614. 2—*Ger. em.* 1471. 2—*Ger.* 1287. 2—*Trag.* 1010—*Park.* 1420. 2—*J. B.* i. a. 63—*Cam. epit.* 162—*Lonic.* i. 50. 2.

(A middle sized tree with hard wood, and smooth bark. *Leaves* on long stalks, serrated, smooth. *Corymbus* terminating, branched, woolly, many-flowered. *Fl. Brit.* E.)

*Cells* 2. *Seeds* 4. *CRANTZ.* *Cups* woolly. *Blossoms* white. *Fruit* reddish brown, austere.

\* It loves dry hills and open exposures, and flourishes either in gravel or clay. It bears lopping, and permits the grass to grow under it. The wood, being hard, tough, and smooth, is used for axle-trees, wheels, walking sticks, carpenters' and other tools. The fruit is eatable when mellowed by the autumnal frosts, and an ardent spirit may be distilled from it. It seldom bears a good crop of fruit two years together. Sheep and goats eat it. On *Breiddin Hill* it is very difficult of access, for *Mr. Aikin* observes that the goats devour every plant within their reach.—The wood affords an excellent charcoal for the makers of gunpowder, *Mr. GOUGH.*

*Wild Service-tree, or Sorb. Service Hawthorn. Pyrus torminalis*. Fl. Brit. Woods and hedges. [Bath Hills, near Bunday. Mr. WOODWARD.—Pendeford, Staffordshire, in hedges. Mr. PITT.]—On the rocks at Knot's hole, near Liverpool, in a situation quite exposed to the salt water, and where it must occasionally be washed by the spray of the sea. Dr. BOSTOCK. E.)  
T. May.

C. Leaves mostly 3-cleft; segments blunt, serrated. Oxyacan'tha.

*Jacq. austr.* 292. 2—*Matth.* 163—*Blackw.* 149. 2—*J. B. i.* b. 49—*Fl. dan.* 634.

Var. 2. *Monogynia*. Flowers with one pistil; leaves, segments more acute and expanding.

*Jacq. austr.* 292. 1—*Fl. dan.* 1162—*Sheldr.* 21—*Barr.* 563—*Clus.* i. 121—*Lob. obs.* 614. 2—*Park.* 1025—*Walc.—Blackw.* 149. 1—*Trag.* 984—*Ger.* 1146. 1—*Dod.* 751. 1—*Ger. em.* 1327. 1.

Var. 3. *Trigynia*. Flowers with 3 pistils.

*Hunt. Evel.* 398. ii. p. 92. ed. 2d.

All the above varieties are found in our hedge rows; that with one pistil is the most common, and that with three the most rare. (*Branches* smooth, stiff, spinous. E.) *Flowers* white, but in clayey soils pinky red. *Berries* mostly a coral red, but sometimes yellow, or white. *Leaves*, the segments more or less blunt or acute; the middle segment 3-cleft; the segments more or less serrated upwards, but entire at the base. *Capsules* mostly one-seeded, but sometimes there is a second cell, and the rudiment of a second seed.

*White-thorn. Haw-thorn. May. Mespilus Oxyacantha.* GÆRTNER. Fl. Brit. Hedges, woods, and old parks.

T. May—June.\*

Var. 4. *Glastonbury Thorn*. Appendages at the base of the leaves kidney-shaped, toothed, very large. It does not grow within the ruins of the Abbey at Glastonbury, but in a lane beyond

\* On account of the stiffness of its branches, the sharpness of its thorns, its roots not spreading wide, and its capability of bearing the severest winters without injury, this plant is universally preferred for making hedges, whether to clip or to grow at large. The wood is hard and tough, and is formed into axle-trees and handles for tools. The berries are the winter food of Thrush and many other birds. The different species of *Cratægus* afford nourishment to *Papilio Cratægi*; *Phalæna cæruleocephala*, *Oxyacantha*, and *cratægata*.—(Near the rustic bridge in the Belan grounds, at Wynnstay, North Wales, I measured a Hawthorn six feet in girth, five feet from the ground, which may be considered an extraordinary size. E.)

the church-yard on the other side of the street by the side of a pit. It appears to be a very old tree. An old woman of 90 never remembers it otherwise than as it now appears. There is another tree of the same kind two or three miles from Glastonbury. It has been reported to have no thorns, but that I found to be a mistake: it has thorns, like other Hawthorns, but which also on large trees are but few. There is a full-sized tree of this kind in the garden at Piper's Inn. It blossoms twice a year; the winter blossoms, which are about the size of a sixpence, appear about Christmas, and sooner if the winter be severe. These produce no fruit. The berries contain only one seed, and there seemed to have been only one pistil, but it was late in the season when I examined it. I was informed that the berries when sown, produce plants no wise differing from the common Hawthorn. Probably the tree which gave birth to the legend grew within the walls of the abbey, and may have died from age, or been destroyed at the time of the reformation.

### TRIGYNIA.

**SOR'BUS.** *Cal.* 5-cleft: *petals* 5: *pomum* 5-celled, open at the top, 3-seeded.

*aucuparia.* **S.** Leaves winged, smooth on both sides.

*Mill. ill.*—*Hunt. Evel.* 218. i. p. 211. *ed. 2d*—*Fl. dan.* 1034—*E. bot.* 337—*Blackw.* 173—*Matth.* 262—*Dod.* 834—*Ger. em.* 1473—*Lob. obs.* 544. 2—*J. B. i. a.* 62—*Ger.* 1290—*Park.* 1419. 2—*Trag.* 1009—*Crantz.* ii. 1. 4.

*Leaves* rib-channeled. *Leaflets* seven or eight pair, sitting, spear-shaped, serrated, the intermediate ones the longest. *Corymbus* terminating. *Berry* round, of a pleasant red or scarlet. *Seeds* 3, 4, 5, reddish. **RELHAN.** *Flowers* whitish. (*Berries* in beautiful bunches, highly ornamental through the latter part of the summer and autumn. *Leaves* when young slightly pubescent beneath. **E.**)

*Quicken-tree.* *Mountain Ash.* *Roan-tree.* *Service.* *Pyrus aucuparia.* **GERTNER.** *Fl. Brit.* (Otters Pool, near Liverpool. **Dr. BOSTOCK.** **E.**)—Woods and hedges in mountainous and boggy situations in Wales, Scotland, and the North of England. **T. April.\***

\* It grows either in woods or open fields, but best on the sides of hills and in fertile soil. It will not bear lopping. Plants grow well in its shade. The wood is soft, tough, and solid. It is converted into tables, spokes for wheels, shafts, chairs, &c. The roots are formed into handles for knives and wooden spoons. The berries dried and reduced to powder



S. Leaves winged, woolly underneath; flowers in panicles. domestica.  
-Fl. Brit. E.)

Jacq. austr. 447-E. bot. 350-Crantz. ii. 2. 3-Nash. i. at p.  
10. f. 1. 3-Matth. 261-Clus. i. 10. 3-Dod. 803. 1-Lob.  
obs. 544. 1-Ger. em. 1471. 1-Park. 1420. 1-Blackw. 174-  
Fuchs. 576-Trag. 1012-J. B. i. a. 59-Lon. i. 50. 1.

Fruit the size of a crab. Does not produce fruit till grown to a considerable age. LINN. Cells 5. All the seeds seldom coming to perfection. Blossom white. Fruit brownish. CRANTZ. Styles always 15. vid E. bot. where it is removed to *Pyrus*. (A middle sized tree of slow growth. Leaves unequally winged. Leaflets sitting, oblong, equal, serrated from the middle to the point. Panicles terminating, woolly. Styles 5. Fl. Brit.

It would appear that *Sorbus hybrida* seems to vary from *Cratægus aria*, and to obtain the wing-cleft or pinnatifid character, by growth in gardens and shrubberies; is it not possible they may be the same plant under different circumstances? vid. also note p. 171. Bot. Guide. E.)

True Service-tree or Sorb. *Pyrus domestica*. Fl. Brit.-E. bot. Mountainous forests, Mountainous parts of Cornwall, and the Moorlands of Staffordshire. [In the middle of a thick wood in the forest of Wire, near Bewdley, Worcestershire, one mile from Mopson's Cross, between that and Dowles Brook.]

T. April.\*

S. Leaves wing-cleft, cottony underneath.

hybrida.

Fl. dan. 301-E. bot. 2331-Linn. fil. fasc. i. 6.

make wholesome bread; and an ardent spirit may be distilled from them, which has a fine flavour, but it is small in quantity. The berries too, infused in water, make an acid liquor somewhat like perry, which is drank by the poorer people in Wales. In Germany the fowlers use the berries to entice the Redwings and Fieldfares into nooses of hair suspended in the woods; hence its trivial name. (Twelve pounds of berries yield two quarts of spirit; the pulp, after distillation, affords excellent nourishment for cattle. The bark when collected in autumn, (according to experiments made in Germany,) is better adapted to the tanning of leather than even that of Oak. This tree appears to have been highly esteemed by the Druids, and is still found more frequently than any other in the neighbourhood of Druidical circles in the Scotch Highlands. Dr. Pulteney informs us that even in these more enlightened times the natives of the North believe in the efficacy of a small branch carried about them as a charm against witchcraft and enchantment. In one part of Scotland the sheep and lambs are on May Day made to pass through a hoop of Roan wood. E.)

\* The fruit is mealy and austere, not much unlike the Medlar. The *Chermes Sorbi* and *Coccinella bipustulata* live upon this and *S. aucuparia*. LINN. The wood is valuable for making mathematical rulers and excisemen's gauging sticks. NASH.

Linnæus considers it as a new tree, produced between the *Cratægus Aria* and the *Sorbus Aucuparia*, having the flowers and pistils of the latter, with the foliage of the former, the leaves being rather winged at the base, but confluent upwards. (Dr. Smith asserts that it may be propagated by seeds; his description appears to have been taken from a garden specimen. E.)

*Bastard Service. Pyrus hybrida.* Fl. Brit. *Pyrus pinnatifida.* EHRH. and E. bot. On mountains. (In rocky places on Cairn na Callich, and other mountains at the north end of the Isle of Arran. Mr. J. MACKAY. *Fl. Brit.* It seems to have been formerly found on Castel Dinas Brân, near Llangollen, by Mr. Waring, according to Mr. Griffith, but the specimens lately produced from that station are judged both by Mr. Griffith and Dr. Smith to be a variety of *Cratægus Aria*, rather than the real *Sorbus hybrida* of Linnæus. The leaves of our specimens from Castel Dinas Brân are indeed very slightly wing-cleft, far less than in those of some garden specimens, and greatly resemble the *C. aria*. E.) T. May.

## PENTAGYNIA.

MES'PILUS. *Cal.* 5-cleft: *petals* 5: *berry* with 1, 2, or 5 cells.

german'ica. M. Thornless; leaves spear-shaped, cottony underneath; flowers solitary, sitting.

*Fl. Ross.* 13. 1—*Ludw.* 88—*Blackw.* 154—*E. bot.* 1523—*Ger.* 1264. 1—*Dod.* 801. 1—*Lob. obs.* 591. 1—*Ger. em.* 1453. 1—*Matth.* 253—*Park.* 1422. 2—*J. B. i. a.* 69—*Trag.* 1014—*Lonic.* i. 13. 1.

*Branches* woolly. *Leaves* oval-spear-shaped; towards the point serrated, and somewhat woolly. *Leaf-stalks* very short, channelled. *Calyx* terminating, hairy, with a floral-leaf as long as the blossom. LINN. *Floral-leaf* strap-shaped. *Calyx* fleshy, woolly within; teeth longer than the blossom. *Stamens* unequal, 30 or more. *Summits* cloven, *Blossoms* white. *Fruit* reddish brown. (In its wild state this tree is always furnished with shining thorns, though when cultivated it is entirely without them. ROTH and HALLER. E.)

*Medlar Tree.* (In all the hedges about Minshull, Cheshire. Du Bois. E.) T. May.\*

\* Many people are fond of the fruit when it becomes soft by keeping; it is somewhat austere, and binds the bowels.

**PYRUS.** *Cal.* 5-cleft: *petals* 5: *pomum* beneath:  
5 celled, many seeded.

*P.* Leaves entire, serrated, smooth; flowers forming a communis.  
corymbus.

*Blackw.* 453—*E. bot.* 1784—*Matth.* 251—*Lob. obs.* 590. 2—  
*Ger. em.* 1457—*Park.* 1500. 1 and 2—*Dod.* 800—*Ger. em.*  
1456—*Ger.* 1267 to 1270—*Lonic. i.* 11—*Trag.* 1045.

Blossom white. (A tall tree; main branches upright, the  
smaller ones curving downwards: the younger leaves clothed  
with an evanescent woolliness. *Leaf-scales* strap-shaped.  
*Corymbus* hairy. *Fruit* tapering towards the base, hard, acerb.  
*Fl. Brit. E.*)

*Wild Pear Tree. Iron Pear Tree. P. Achras.* GÄRTNER.  
*t.* 87. Woods and hedges. T. April—May.\*

*P.* Leaves serrated; flowers in a simple umbel. Ma'lus.

*Fl. dan.* 1101—*E. bot.* 179—*Blackw.* 178—*Ger.* 1276. 1. 2. 3.  
—*Ger.* 1272. 4—*Ger. em.* 1461—*Park.* 1503. 2.

(*Leaves* when young downy underneath; *stipulas* strap-  
shaped: *umbels* terminating, sessile, hairy. *Fruit* roundish,  
umbilicated, acid. *Branches* spreading, more horizontal than  
in the former species, tortuous. *Fl. Brit. E.*) *Leaves* more  
circular than those of the preceding species. *Petals* tinged with  
red on the outside.

\* It loves a fertile soil and sloping ground; but will not thrive well in  
moist bottoms. It stands the severest winters and does not destroy the grass.  
The wood is light, smooth, and compact; it is used by turners, and to make  
joiners' tools; and for picture frames, to be stained black. The leaves afford a  
yellow dye, and may be used to give a green to blued cloths. The fruit is aus-  
tere; but when cultivated highly grateful, as is proved by the great variety of  
excellent Pears which the industry of mankind has raised, for they all originate  
from this. (For a full illustration of this and the following fruit, vid. a beau-  
tiful work, entitled the Pomona of Herefordshire, by Mr. Knight. E.) The  
juice of the fruit fermented is called Perry, large quantities of which are rais-  
ed in Worcestershire and Herefordshire for that purpose. The Squash, the  
Oldfield, and the Barland Perrys are reckoned the best, and are little inferior  
to wine. (Near the parsonage house at Hom Lacy, a seat of the Duke of  
Norfolk, in Herefordshire, the Rev. R. Warner observed a most remarkable  
Pear Tree, covering nearly a quarter of an acre, and forming an orchard of it-  
self, having yielded for many years from twelve to sixteen hogsheds of Perry.  
This tree has spread from a succession of layers which have rooted and bear  
fruit. E.) Horses, cows, sheep, and goats eat the leaves, which afford nou-  
rishment to *Papilio polychloros*; *Phalæna Populi, lubricipeda, quercifolia, pud-  
ibunda, cæruleocephala, brumata, Pomonella*; *Aphis Pyri*; *Chermes Pyri*; *Musca  
Pyrastræ*. LINN.



*Crab Tree. Wilding.* Woods and hedges. T. May.\*

Var. 2. *cultivated.*

*Blackw.* 141—*Mill. ill.—Ger.* 1273 to 1274—*J. B. i. a.*  
1—*Lob. obs.* 590. 1—*Ger. em.* 1459. 1—*Park.* 1503. 1—*Dod.*  
789.—*Ger. em.* 1459. 2—*Lonic.* 1. 10. 1.

*Apple Tree.* Orchards, and hedge rows. T. May.†

**SPIRÆ'A.** *Cal.* 5-cleft: *petals* 5: *caps.* 4 or more,  
2-celled, 2-valved, many-seeded.

*salicifo'lia.* S. Leaves spear-shaped, blunt, serrated, naked; flowers  
in a compound bunch.

*Fl. Ross.* 21—*E. bot.* 1468—*Gmel. sib.* iii. 39—*Kniph.* 3—  
*Clus.* i. 84.

(Grows in straight rods, branches inclining to yellow. *Leaves*  
alternate, nearly sitting, broad-spear-shaped, *Fl. Brit. E.*) A  
Shrub about four feet high. Serratures of the leaves not very  
regular. *Flowers* rose red, paler when expanded.

*Willow-leaved Spiræa.* I am indebted to Mr. GOUCH of  
Kendal for the knowledge of this being a native. He says that  
it sometimes occurs in moist hedges in Westmoreland, in many

\* It flourishes better on declivities and in shady places, than in open ex-  
posures or boggy lands. Grass and even corn will grow beneath it. It is  
much used as a stock, on which to ingraft the better kinds of apples; be-  
cause its roots are neither killed by frost nor eaten by field mice. The  
bark affords a yellow dye. The wood is tolerably hard; it turns very clean,  
and when made into cogs for wheels obtains a polish, and wears a long time.  
The acid juice of the fruit is called by the country people Verjuice, and  
is much used in recent sprains, and in other cases as an astringent or re-  
pellent. With a proper addition of sugar it is probable that a very grate-  
ful liquor might be made with the juice, little inferior to Old Hock.—Horses,  
cows, sheep, and goats eat it; swine are very fond of the fruit. LINN. *Pha-*  
*læna dispar, Populi, Fascelina, Chrysorrhæa, Psi, Oporana, brumata, Pomonel-*  
*la, Monacha; Aphis Mili; Scarabæus Horticola* feed upon it.

† The juice fermented is called Cyder, of which large quantities are made  
in Herefordshire, Devonshire, part of Worcestershire and Gloucestershire, in  
a soil of deep clay. The stronger sorts, as the Styre Cyder, will bear expor-  
tation to the East and West Indies. The Cyder Apple-trees were originally  
brought from Normandy, and it is supposed by many that the liquor would be  
now improved by a fresh importation. (Thomas Andrew Knight, Esq. of Elton,  
near Ludlow, so justly celebrated for his researches into the vegetable physiolo-  
gy, has published among various other papers, a volume of very ingenious  
experiments on the Apple and Pear Trees, and is now more fully illustrat-  
ing this important subject by a work entitled the "Pomona of Herefordshire,"  
in which will be found descriptions of both the old and improved fruits, to-  
gether with highly finished representations of each kind. E.)

places on the borders of Winandernere, and that it has lately been discovered by Mr. DALTON, of the Academy of Manchester, by the road between Pool Bridge and Colthouse, near Hawkshead, Cumberland. It is well known in our gardens by the name of *Spiræa frutex*. (Hedge between Green Hammerton and Knaresborough, far from any house or Garden. TEESDALE. In a wood at Hafod, Cardiganshire, near a gate, in the Eastern approach to the house. Dr. SMITH. It is said also to have been found in Scotland. E.) S. July.

S. Leaves interruptedly winged; leaflets strap-spear-shaped, irregularly serrated, very smooth; flowers in tufts.

*Fl. dan.* 635.—*E. bot.* 284.—*Blackw.* 467.—*Kniph.* 3.—*Fuchs.* 562. *Trag.* 883.—*Lonic.* i. 220. 2.—*Ger.* 900. 1.—*Matth.* 865.—*Clus.* ii. 211. 2.—*Dod.* 56. 1.—*Lob. obs.* 420. 3.—*Ger. em.* 1058. 1.—*Park.* 435. 1.—*Pet.* 71. 6.—*H. ox.* ix. 20. row 1, left hand figure.

(Three or four feet high, leafy, furrowed. *Leaflets* very unequal, white and woolly underneath, veiny. *Flowers* white, small, fragrant, sometimes double. *Fl. Brit. E.*) *Capsules* numerous, disposed in a circle. LINN. *Stem* herbaceous. *Leaflets* mostly alternate, smooth on both sides and shining. A pair of little leaflets sitting on the leaf-stalk between each pair of larger leaflets. *Fruit-stalk* crooked before the flowers expand. *Petals* cream-coloured, purplish underneath, turned back. *Styles* many.

*Dropwort. Meadow-sweet.* Mountainous meadows and pastures, in a calcareous soil. [Swaffham Heath, Norfolk. Mr. CROWE.—Ripton, Huntingdonshire. Mr. WOODWARD.—Bredon Hill, above Overbury, Worcestershire. NASH.—Near Mardresfield, Worcestershire. Mr. BALLARD.—St. Vincent's Rocks, Bristol. Mr. SWAYNE.—Rocky ground between Dundee and Broughty-castle. Mr. BROWN. About Stone Henge.]

P. June—July.†

S. Leaves interruptedly winged; leaflets egg-shaped, doubly serrated, hoary underneath; flowers in tufts.

† The tuberous pea-like roots, dried and reduced to powder, make a kind of bread, which in times of scarcity, is not to be despised.—Hogs are very fond of them. LINN.—When expanded and enlarged by cultivation, it is a beautiful addition to the flower garden.

*Curt.* 340-*E. bot.* 960-*Lindw.* 23-*Fl. dan.* 547-*Blackw.* 465-*Kniph.* 1-*Clus.* ii. 198. 1-*Dod.* 57-*Ger. em.* 1043-*Park.* 592. 1-*Pet.* 71. 8-*H. ox.* ix. 20, row 1. 1. *fig.* 3d. -*Ger.* 886-*J. B.* iii. 488. 2.

(*Styles* six or eight. *E. bot.* *Root* fibrous. *Stem* three or four feet high, furrowed, leafy. *Flowers* white, small, fragrant. *Fl. Brit. E.*) *Stem* angular, reddish. *Leaves* bright green above, white underneath, irregularly serrated; the terminating leaflet divided into three segments. *Flowers* yellowish white. *Calyx* segments and petals sometimes four. *Capsules* five to eight, but mostly six, twisted spirally together. *Common Meadow-sweet. Queen of the Meadows.* Moist meadows, and banks of rivers. P. June—Aug.\*

## POLYGYNIA.

RO'SA. *Petals* 5: *Cal.* urn-shaped, 5-cleft, fleshy, contracted at the neck so as to form at length a coloured berry of 1 cell, opening at the top; *seeds* many, hispid, dispersed in the pulp.

(1) *Germens* more or less globular.

arven'sis.

R. *Germens* and fruit-stalks smooth; stem and leaf-stalks prickly; flowers in tufts.

*E. bot.* 188-*Walc.*-*J. B.* ii. 44. 1.

*Leaves* simply serrated. *Fruit-stalks* beset more or less with hairs terminated by globular heads, not subdividing as in a tuft, nor rising exactly from the same point as in an umbel; sometimes solitary. *Prickles* bowed downwards. *Blossoms* white. *Styles* as soon as they have passed through the neck of the calyx, compacted into a cylinder resembling a single style, terminated by a knob composed of the summits. This circumstance will alone distinguish it from the other species. *Fruit* globular, red. *St.*

*White-flowered Dog Rose. Corn Rose. Hedges* and heaths. [This is the most common Rose in the west of Yorkshire, and

\* The flowers infused in boiling water, give it a fine flavour, which rises in distillation. Sheep and swine eat it. Goats are extremely fond of it. Cows and horses refuse it. *Sphinx ocelata*, and *Filipendula* feed on both species. **LINN.**



about Manchester. Have not seen it within 50 miles of Darlington. Mr. ROBSON.] S. July.

Var. 2. HUDS.—Wild Dog Rose, with only 1 flower. RAY  
*Syn. indic.* Between Hackney and London, and Bishop's Wood, *ib.*

R. Germens and fruit-stalks smooth; stem and leaf-stalks *spinosis'sima*.  
fully set with straight prickles; leaflets circular,  
smooth.

*E. bot.* 187—*Fl. dan.* 398—*Ger.* 1088—*J. B.* ii. 41. 1—*Park.*  
1018, 8—*Clus.* i. 116. 1—*Dod.* 187—*Ger. em.* 1270. 3—  
*J. B.* ii. 40. 2.

*Prickles* awl-shaped, straight, horizontal, very thickly set,  
unequal. *Fruit-stalks* with or without prickles. *Calyx* leaves  
entire. LINN. *Leaf-stalks* not prickly. *Leaflets* very small,  
roundish, sitting. *Leaf-scales* small, halberd-shaped, toothed.  
WOODWARD. *Blossoms* white, or cream-coloured, sometimes  
red. LIGHTFOOT. *Prickles* very unequal in size, some flat,  
others like needles. The *R. spinosissima*, and the *R. pimpinellifolia* of Linnæus, we are now assured are the same plant.  
(*Fruit* purplish, when fully ripe black, sometimes slightly spinous. The plant occasionally very diminutive, and rarely exceeding two feet in height. E.)

*Burnet Rose. Pimpernel Rose.* Heaths and sandy places.  
[Hedges near Yarmouth, frequent. Mr. WOODWARD.—Perran Downs, Cornwall. Mr. WATT.—Hedges and ditch banks about Worcester. Dr. STOKES. Frequent in the sandy country about Bewdley.]—(North shore, near Liverpool. Dr. BOSTOCK. E.)  
P. June—July.

Var. 2. Blossoms red, striped with white. SIBBALD.  
LIGHTFOOT.

*Ciprian Rose.*

Var. 3. Fruit-stalks prickly; flowers cream-colour, changing to white.

Specimen from Lanscale Haws, Lancashire; sent by Mr. Atkinson, who informs me that it covers several acres of sand, to the exclusion of every other vegetable.\*

\* The ripe fruit is eaten by children; it has a grateful sub-acid taste. The juice diluted with water, dyes silk and muslin of a peach colour; and with the addition of alum a deep violet; but it has very little effect on woollen or linen.

Its dwarfish growth, and the singular elegance of its little leaves, which resemble those of the upland Burnet, entitle it to a place in the flower garden.

(Var. 4. *Prickly Unexpanded Rose*. *R. involuta*. Fl. Brit. and E. bot. 2068.

Dr. Smith states this plant to exhibit the general appearance of *R. spinosissima*, and to be distinguished from the other varieties of that species chiefly, if not solely, by both fruit and fruit-stalks being armed with prickles, and by the petals being closed inwards, not expanded.

We do not, therefore, see sufficient reason for constituting this a distinct species, especially as the plant has hitherto been but very imperfectly known. It is said to have been discovered in the Western Islands of Scotland, by Messrs. Walker, and J. Mackay. On referring to our specimens, and judging from the figure in *E. bot.* it would appear that this Rose differs but very slightly from Mr. Atkinson's Lancashire plant described under var. 3. *E.*)

villosa.

*R.* Germens and fruit-stalks hispid; stem with scattered prickles; leaf-stalks prickly; leaves cottony.

*E. bot.* 583—*J. B.* ii. 38. 1—*Park. par.* 419. 7.

*Stem* smooth, two or four prickles near together below the knots. *Leaves* blunt. *Petals* red. LINN. *Fruit-stalks, germens, leaf-stalks*, edges of the *leaf-scales*, and serratures of the *leaflets* beset with hairs of various lengths, terminated by a gland. *Leaflets* six, with an odd one, egg-spear-shaped, more or less pointed. *Petals* longer than the calyx. *Fruit* not always hispid. Mr. WOODWARD. *Leaves* doubly serrated. ST. *Leaves* cottony on both sides.

*Apple Rose.* Mountainous hedges and shady places in the Northern counties. [Grass Wood, near Kilnsay, Yorkshire. CURTIS.—In the vallies of mountainous countries. In the Craven part of Yorkshire. Mr. WOOD.—Near Ulswater, Cumberland. Mr. WOODWARD.]—(In the way from Edinburgh to Ravelston wood. Dr. SMITH. *E.*)

Var. 2. HUDS.—*Wild Briar*, or *Dog Rose*, with large prickly *heps*. RAY. (*Rosa tomentosa*. Fl. Brit. Nor can we detach from this species the *R. scabriuscula*. *E. bot.* 1896, with prickles more straight and slender, leaves harsher, and petals white, only blotched with red. *E.*)

*Petals* rather larger; *leaflets* broader, shorter and more pointed; and *prickles* more hooked than in the north country plant. No other observable difference. Mr. WOODWARD. *Stem* wrinkled, not hairy or glandular. *Leaflets* egg-shaped, serrated, 1 and 2, but mostly 3 pair, cottony on both surfaces. *Fruit-stalks*,

*floral-leaves, calyx, germens, edges of the leaves, and leaf-stalks* set thick with globular glands supported on longer, shorter, finer, or coarser hairs or bristles. *Prickles* a little hooked downwards, rather flat, not broad. The leaves when rubbed have a faint agreeable scent.

Hedges, common. RAY. WOODWARD.—Near London. HUDSON.—(Shropshire, Wales, Norfolk.—Bootle, near Liverpool. Mr. SHEPHERD. E.) P. June.

(R. Fruit nearly globose, smooth; flower-stalks smooth; *Hibernica*. prickles of the stem slightly hooked; leaflets elliptical, smooth, with hairy ribs.

*E. bot.* 2196.

*Fruit* slightly elongated upwards, but always round and broad at the base. *Stem* 6 feet high, upright, much branched, and very prickly. *Prickles* scattered. *Flower-stalks* often solitary, often 2 or 3 together. *Petals* pale blush-coloured. *Styles* distinct at the base. It is remarkable for continuing in blossom from the early part of June to the middle of November. The scarlet fruit distinguishes this species from every variety of *R. spinosissima*. *E. bot.*

*Irish Rose.* Discovered in the county of Down, growing abundantly about Belfast harbour, by JOHN TEMPLETON, Esq. who consequently found himself entitled to the reward of £50. offered by the patrons of Botany at Dublin for the discovery of a new Irish plant. P. June—Nov. E.)

(2) *Germens* egg-shaped.

R. *Germens* and fruit-stalks prickly at the base: prickles rubiginous, on the stem bent back: leaves rusted underneath.

*E. bot.* 991—*Fl. dan.* 870—*Jacq. austr.* 50—*Walc.*—*Dod.* 186. 2—*Ger. em.* 1269. 1, left hand fig.—*Ger.* 1087. 1—*Park. par.* 419. 8.

*Branches* smooth, but with scattered rather large prickles. *Leaflets* generally 7, egg-shaped, pointed, scattered underneath with purplish resinous globules. *Leaf-stalk* rough with hairs, and minute prickles, and as are the *floral-leaves*, beset with minute glands on pedicles. *Germen* nearly globular, beset, especially at the base, with a few small prickles. *Fruit-stalks* with very minute prickles. *Blossom* red. The *R. Eglanteria* differs in growing taller, having straight prickles, and blossoms large, yellow, and scentless. LINN. *Leaflets* doubly serrated,



smooth above, except a few scattered hairs along the mid-rib, even in the newly expanded leaves, half doubled together, not so full-scented as those of the *Garden Sweet-briar*. Glands rust-coloured or red. Its habit and mode of growth the same with that of the garden sort. In the *Garden Sweet-briar* the leaves beset above with very short hairs, oval-egg-shaped, and not unfrequently oval; the glands yellowish. They seem at least varieties. ST. Fruit black when ripe. LIGHTFOOT. That of the *Garden Sweet-briar* scarlet, sometimes smooth. ST. Germen, prickles not numerous, and chiefly on one side. Leaves, the rusty appearance chiefly confined to the lower leaves. The sweet-scent seems to arise from the glands.

*Sweet-briar Rose. Eglanteria* or *Eglantine. R. suavisfolia*. LIGHTF.—*R. eglanteria*. HUDS. DU ROI. Hedges and heaths. [Hedges, Norfolk, but not frequent. MR. WOODWARD.—Between Dudley and Tipton. In Mr. Terne's garden, Worcester, from a gravel pit near Claines Church. DR. STOKES.]—(At Battersea, by Mr. SOWERBY. *E. bot. E.*) S. June—July.

canina.

*R. Germens* and fruit-stalks smooth; stem and leaf-stalks prickly.

*Curt.* 299—*E. bot.* 992—*Kniph.* 7—*Fl. dan.* 555—*Blackw.* 8—*Ludw.* 70—*Walc.* 5—*Park.* 1017. 1—*J. B.* ii. 43. 2—*Trag.* 986. 2—*Ger.* 1087. 2.

Stem smooth, with two alternate hooked prickles between each knot. Leaf-stalks with hooked prickles. Leaves sharpish, bare of hairs on each side. Floral-leaves 2, opposite, fringed. Petals with two lobes, flesh-coloured. LINN. Leaflets two or three pair, with an odd one, pointed; serratures terminated by minute purple glands. Leaf-stalks sheathing; edges beset with purple glands. Prickles broad, flat, bowed downwards. Calyx segments 2, furnished with long teeth on both edges, two without, and the fifth with teeth on one edge. Petals red, sometimes nearly white; one lobe larger than the other. (The Rev. MR. SUTTON observes, in *E. bot.* that as the fruit of *R. rubiginosa* is occasionally smooth, so that of *R. canina* is very rarely a little hispid.)

We are at a loss to discover any real specific difference between this species and *R. collina*, *E. bot.* 1895. The same opinion seems also to prevail with the reporter in the *Monthly Magazine. E.*)

*Dog-Rose. Hep Tree. Wild Briar.* Hedges and woods. S. June.\*

\* A perfumed water may be distilled from the blossoms. The pulp of the berries, beat up with sugar, makes the conserve of heps of the London Dispensatory. Mixed with wine it is an acceptable treat in the north of Europe. Several birds feed upon the berries. The leaves of every species of Rose, but especially of this, are recommended in the *Eph.*

**RU'BUS.** *Cal.* 5-cleft: *petals* 5: *styles* from the top of the germen: *drupa* clustered, 1-celled, fixed to a conical receptacle so as to resemble a berry.

(1) *Shrub-like.*

**R.** Leaves winged, with 5 or 3 leaflets; stem prickly; leaf-stalk channelled. idæ'us.

*Fl. dan.* 788—*Woodv.* 138—*Clus.* i. 117—*Dod.* 743. 1—*Lob. obs.* 619. 2—*Ger. em.* 1272. 2—*J. B.* ii. 59. 2—*Lonic.* i. 41. 2—*Park. par.* 559. 1—*Trag.* 973—*Ger.* 1089. 1—*Matth.* 1010.

*Stems* upright, or slightly bent, green, two feet high, biennial, producing fruit the second year, after which they die down, thick set with small prickles. *Leaves* serrated, cottony underneath. *Fruit-stalks* rough with hair. LINN. *Blossoms* white, (panicled. *Calyx* permanent, woolly, sharp-pointed. E.) *Berry* red, fragrant.

*Raspberry Bush, or Bramble Bush. Framboise. Hind-berry.* Woods and hedges, rocky mountains, and moist situations. [Grass Wood, near Kilnsay, Yorkshire. CURTIS.—Thorpe, near Norwich. Mr. CROWE.—Berkhampstead, Herts. Mr. WOODWARD.—Woods to the west of Bishop's Auckland. Mr. HUTCHINSON.—Wood on the South side of Edgbaston pool, Warwickshire In wet woods, and in thickets and rough places near rivulets, common about Birmingham.] (Plentiful in the wild woods of Wales, E.) S. May—June.\*

*nat. curiosor*, as a substitute for tea, giving out a fine colour, a sub-astringent taste, and a grateful smell, when dried and infused in boiling water.

It is a difficult matter to say which are species and which are varieties only, in this genus; Linnæus seems to think that there are no certain limits prescribed by nature. (The Eglantine Rose will bear cropping to form beautiful and fragrant hedges E.)

The different species nourish the following insects: *Phalæna Salicella*, *Pavonia*, *Libatrix*, *Retularia*; *Tenthredo Rosæ*, *Cynobati*; *Ichneumon Bedegauris*; *Cicada Rosæ*; *Aphis Rosæ*; *Scarabæus auratus*; *Musca pelluens*; and those moss-like prickly excrescences, which are frequently found upon the branches of Roses, especially upon the last species, are the habitations of the *Cynips Rosæ*. This excrescence was formerly in repute as a medicine, and was kept in the shops under the name of Bedeguar. An infusion of the full blown blossoms of all the rose, especially the paler kinds, is purgative; but the petals of the red roses, gathered before they expand, and dried, are astringent.

\* The fruit is extremely grateful, as nature presents it; but made into a sweetmeat, with sugar, or fermented with wine, the flavour is im-

cæ'sius.

R. Leaves 3 together almost bare; lateral leaves 2-lobed; stem prickly, cylindrical; panicle few-flowered. WOODWARD. (Segments of the calyx expanding. E.)

*E. bot.* 826—*Dod.* 742. 2.

*Stem* three feet long, purplish, branched, with pendent shoots at the top. *Prickles* very fine, scattered, small, bowed back, interspersed between the rough points. *Leaves* green, not cottony, though often downy underneath, serrated; the middle leaflet egg-shaped, the lateral ones with generally two lobes. LINN. *Fruit-stalks* round, downy, long, with from one to three flowers, sometimes prickly. *Fruit* composed of fewer and larger granulations from one to five. Mr. WOODWARD. *Blossoms* white. *Fruit* bluish black, ascendent. (*Stem* prostrate, rod-like, glaucous, radicating. *Fl. Brit.* E.)

*Dew-berry Bush*, or *Bramble*. Woods and hedges, [and balks of corn fields. Mr. WOODWARD.] S. June—July.

(corylifolius.

R. Leaflets generally five, hairy beneath; the lateral ones sessile; prickles straightish; calyx reflexed. E. bot.

*E. bot.* 827—*Schmid. ic.* 2. E.)

*Stems* roundish; when growing in hedges frequently stronger and larger than the *R. fruticosus*, but in ditches not larger than *R. cæsius*, and throwing out creeping runners. *Prickles* smaller than those of var. 1. slightly bent, but not hooked. *Leaves* bright green above, beneath pale and slightly hairy, but never downy; the odd leaflet largest, on a long leaf-stalk, and, in the 5-fingered ones the second pair on very short leaf-stalks, egg-spear-shaped, pointed, broad at the base, sometimes slightly heart-shaped, cut-serrated, and more deeply and irregularly jagged than in var. 1; in the 3-fingered ones the lateral leaflets lobed. *Fruit-stalks* roundish. *Flowers* smaller and later than those of var. 1, often abortive. *Fruit* with few and large granulations, and, when ripe, covered with a bloom. DILL. in *R. Syn.* 467, seems to have been clear that there were two sorts of *Great Bramble*, (observing that in this the *flowers* are earlier, larger, and white, E.) but he has not well ascertained their differences. (These have been more recently discriminated by Mr. Crowe, in E. bot. where the plant is described as having a "*stem* roundish, biennial, not truly shrubby or perennial, much more brittle,

proved. It is fragrant, sub-acid, and cooling. It dissolves the tartarous concretions of the teeth, but for this purpose it is inferior to the Strawberry. The white berries are sweeter than the red, but they are generally contaminated by insects. The fresh leaves are the favourite food of kids.



so that it is rejected by thatchers who use the other for binding thatch; all the *prickles* nearly straight, not hooked; *leaflets* large, always green on both sides, never white beneath, sometimes very exactly resembling the leaves of a Hazel; the lateral ones sessile. *Fruit* earlier, of a browner black, more gratefully acid than in *R. fruticosus*, and composed of rather fewer grains." Notwithstanding this attempt to establish a species, we cannot but greatly doubt these characteristics proving invariable, especially when we observe accounts so contradictory as those offered for the same plant by Mr. Wigg, in *Fl. Brit.* and by Mr. Woodward in *With. Ed. 4*, where that very accurate botanist states, it is remarkable that the segments of the calyx in this plant are clasped inwards upon the fruit, whilst in the *R. cæsius* they are expanded. I wish it to be determined by examination, if the segments of the calyx of the fruit are not always bent inwards and clasping the fruit in this plant, always expanding in the *R. cæsius*, and always reflected in *R. fruticosus*. E.)

*Hazel-leaved Bramble. R. coryfolius. E. bot. and Fl. Brit. R. fruticosus major. WITH. Ed. 3 and 4. Hedges. In Norfolk, generally intermixed with R. fruticosus. Messrs. PITCHFORD and WOODWARD.*

*R. Leaves winged, with 3 or 5 leaflets; stem and leaf-fruticose. stalks prickly; panicle oblong. WOODWARD. (Stem angular, segments of the calyx reflexed. E.)*

*E. bot. 715-Fl. dan. 1163-Mill. ill.-Schmied. 2-Blackw. 45. 7-Kniph. 5-Matth. 1009-Dod. 742 1-Lob. obs. 619. 1, ic. ii. 211. 2-Ger. em. 1272. 1-Park. 1013-Fuchs. 152-Trag. 970-Ger. 1089. 2-J. B. ii, 59. 1-Lonic. i. 41. 1.*

*Stem* angular, very long, with runners often several times the height of a man in length, spreading and climbing far and wide, and sometimes striking root. *Prickles* alternate, strong, bowed back. *Leaves* sharply and unequally serrated, either green on both sides, or white and cottony underneath; the middlemost leaf largest, heart-shaped, on a leaf-stalk, the rest sitting, the lowermost very small, pointing backwards. LINN. *Leaves*, the lower 5-fingered, the upper 3-fingered, and sometimes simple or with two or three lobes. *Petals* flaccid, white, or purplish. *Granulations* about fifty. HALL. *Stems* always angular. *Prickles* always strong and hooked. *Leaflets* usually elliptical, sometimes oval-spear-shaped, serrated, dark green above, white with a close down underneath, sometimes, though rarely, only hairy, and then pale green; the middlemost on a long leaf-

stalk, the next pair on short leaf-stalks, the lower on shorter leaf-stalks, and sometimes, though rarely, sitting. Mr. Woodward. *Prickles* broad at the base and flattened. *Fruit* black.

Var. 2. *Fruit* white. Bark and leaves of a pleasant green. Hedge near Oxford. BOBART in *R. Syn.* 467. 2.

*Bramble. Black-berry Bush.* Hedges and woods.

S. June—Sept.\*

(2) *Herbaceous.*

saxatilis.

R. Leaves 3 together, naked; shoots creeping, herbaceous, LINN. Lower-leaves sometimes 5 together. Dr. J. E. SMITH.

*Fl. dan.* 134—*E. bot.* 2233—*Clus.* i. 118. 1—*Ger. em.* 1273. 4—*Ger.* 1090, 3—*Park.* 1014. 4—*J. B.* ii. 61.

*Shoots* thread-shaped, very long, dying down at the end of the year, rough with hairs, and often beset with weak thorns. *Granulations* of the berries distinct. LINN. *Leaflets* generally one on a leaf-stalk, and the rest sitting, sometimes all on leaf-stalks, sometimes all sitting; cut-serrated, pale green, slightly hairy underneath. *Fruit* composed of a few large granulations, when ripe of a beautiful clear pink, and a pleasant sub-acid flavour. *Blossom* purple or white. Mr. Woodward. (Whole herb of a slender, delicate habit. *Stems* solitary, erect, unbranched, a span high. *Panicle* terminal, of a few small, greenish-white flowers, with a pointed calyx and narrow upright petals. *E. bot.* E.)

*Stone Bramble.* Amongst stones on the sides of mountains in Yorkshire, Cumberland, and Westmoreland. [Llyn y Cŵn, near Snowdon. PENN. *Wales.* Woods about Settle and Ingleton, and not far from the summit of Helsfelhab, near Kendal. CURTIS.—Helk's Wood, by Ingleton, Yorkshire. Hills opposite Matlock Bath. Mr. Woodward.—In Dob Bottom, a deep, woody, rocky dell, opposite the Holme, near Burnley, Lancashire. Mr. Wood.]—(Woods at Roslin. Mr. Borrer, in *E. bot.*—In the wood beyond the Strid at Bolton. HAILSTONE, in WHITAKER.—East side of Seamer Moor, near Scarborough. Mr. TRAVIS. E.)

P. June.

\* The berries, when ripe, are black, and do not eat amiss with wine. The green twigs are of great use in dying woollen, silk and mohair, black. Cows and horses eat it. Sheep are not fond of it. LINN. Three horses refused it. Silk-worms will sometimes feed upon the leaves in defect of those of the mulberry. STOKES.

R. Leaves 3 together : stem without prickles, supporting a arc'ticus. single flower.

*E. bot.* 1585—*Fl. lapp.* 5. 2—*Fl. dan.* 488.

About a span high. *Flower* purplish. *Berry* dark purple, nearly the size of a mulberry. LINN. (*Stem* upright, angular. *Leaves* unequally serrated, almost always smooth. *Calyx* hairy. *Fruit* sweet and fragrant. *Fl. Brit.* E.)

*Dwarf Crimson Bramble.* This species is said lately to have been discovered in the Highlands of Scotland. (In the Isle of Mull. Rev. Dr. WALKER.—Ben-y-glo, Blair, in Scotland. Mr. COTTON, in *E. bot.* E.) P. May.\*

R. Leaves simple, lobed; stem without prickles, with Chamæ-one flower; (segments of the calyx egg-shaped. E.) mo'rus.

*E. bot.* 716—*Fl. dan.* 1—*Fl. lapp.* 5. 1—*Lightf.* 13. at p. 266—*Park.* 1014. 7—*Ger.* 1368—*Ger. em.* 1420.

Male and female flowers on different plants, but Dr. Solander discovered the roots of the two plants to be united under ground. LINN. *Stem* hardly a foot high. *Blossom* white, or purple. *Berries* red. (*Stem* simple, one-flowered. *Leaves* heart-shaped, in folds, unequally serrated, on leaf-stalks. *Fl. Brit.* E.)

*Cloud-berry. Mountain Bramble. Knot-berries.* Peat bogs on the sides of the mountains of Yorkshire, Westmoreland, Cumberland, Lancashire, Caernarvonshire, and Scotland. [Sides of the highest mountains about Settle and Ingleton. CURTIS. Ingleborough, Yorkshire. Mr. WOODWARD.—Near Egleston, Durham. Mr. HUTCHINSON.] P. May—June.†

FRAGA'RIA. *Calyx* 10-cleft: *petals* 5: *seeds* naked, smooth, on a receptacle which is egg-shaped, coloured, deciduous, resembling a berry.

\* (From the fruit may be prepared a highly flavoured sweetmeat, and a rich wine is made from it in Sweden. *E. bot.* E.)

† The berries are not unpleasant, and held to be an excellent anti-scorbutic. The Norwegians pack them up in wooden vessels and send them to Stockholm, where they are served up in desserts, or made into tarts. The Laplanders bury them under the snow, and thus preserve them fresh from one year to another. They bruise and eat them with the milk of the Rein Deer. In the Highlands of Scotland also they are sometimes brought to table with the dessert. The *Papilio Rubi*, *Phalæna Pavonia*, *Rubi*, *Fascelina*, and *Sambucaria* are nourished by the different species.



ves'ca,

F. Leaves 3 together; runners creeping.

*Blackw.* 77. 1—*Ludw.* 136—*Kniph.* 8—*E. bot.* 1524—*Sheldr.* 3. 6—*Dod.* 672. 9—*Ger. em.* 997. 1—*H. ox.* ii. 19. row 1. 1. f. 2—*Pet.* 40. 7—*Fuchs.* 853—*J. B.* ii. 395. 3—*Trag.* 500—*Lonic.* i. 215. 1.

When growing in woods the segments of the calyx cut at the point. *REICHARD.* *Wires* long, slender, smooth, often tinged with purple. *Leaf-stalks* woolly. *Leaves*, leaflets 3, egg-shaped, serrated. *Fruit-stalks* with two or more flowers. *Blossom* white. *Fruit* red, (nodding, fleshy, fragrant, well-flavoured. *Seeds* granular, external. *E.*)

*Wood Strawberry.* Woods, hedge banks, &c.

Var. 2. *HUDS.* Fruit harsh, rough, and prickly, greenish, with some shew of redness. Blossoms greenish. *GER. em.*

Hyde Park; Hampstead Wood. *MERRET.*

Var. 3. Fruit white.

Common in woods, hollow-ways, and hedge banks, particularly in marl or clayey soil.

P. May—June.\*

This has been supposed to be the common stock from which all the different sorts cultivated in gardens are derived, but one of the garden sorts with a very large berry, called the Hautboy Strawberry, the var.  $\beta$  of Linn. bears male and female flowers on different plants.

stérilis.

F. Stem prostrate, without creeping runners.

*Curt.* 173—*E. bot.* 1785—*Vaill.* 10. 1—*Lob. ic.* i. 698—*Ger. em.* 998—*Pet.* 40. 8—*J. B.* ii. 395—*H. ox.* ii. 19. 5.

*Shoots* thick, depressed, covered with spear-shaped stipulæ of the colour of rusty iron. *Leaves* growing by threes, inversely egg-shaped, serrated, flexible, hairy, white underneath. *Leaf-stalks* very hairy. *Flowering-stems* thread-shaped, with a few small leaves. *Flowers* solitary, white, on fruit-stalks. *LINN.* Mr. Curtis considers this plant as forming the connecting link between the *Fragaria* and *Potentilla*, having the leaves of the

\* The berries, either eaten alone, or with sugar, or with milk, are universally esteemed a delicious fruit. They are grateful, cooling, sub-acid, juicy, and have a delightful smell. Taken in large quantities they seldom disagree. They promote perspiration, impart a violet scent to the urine, and dissolve the tartarous incrustations upon the teeth. Persons afflicted with the gout or stone have found great relief by using them largely, and Hoffman says, he has known consumptive patients cured by them. The bark of the root is astringent. Sheep and goats eat it. Cows are not fond of it. Horses and swine refuse it. The *Cicada Spumaria* (Cuckow spit) is very frequently found upon the leaves, and the *Coccus Polonicus* upon the roots.

former, but in fructification more resembling the latter. Gmelin considers it as a *Comarum*, and calls it *C. fragarioides*. (Roth also thinks it should be referred to the genus *Comarum*, as having no berry-like, deciduous receptacle, but one that is dry, spongy, and permanent; we must, however, agree with the writer of the Botanical Report (Month. Mag. v. 24.) that the *succulent* or *dry* state of the receptacle does not of itself seem sufficient to divide the genus. In a case of difficulty the *habit* should always have great weight, and in this respect it is altogether a *Fragaria*. E.)

*Barren Strawberry*. Barren pastures, heaths, and hedge banks. P. April—May.

**POTENTILLA.** *Calyx* 10-cleft; *petals* 5: *seeds* roundish, naked, wrinkled, fixed to a receptacle, which is small, juiceless, spongy, tubercled.

(1) *Leaves winged*.

P. Leaves winged; stem shrub-like.

fruticosa.

*Dicks. h. s.—E. bot.* 88—*Kniph.* 5—*Walc.—H. ox.* ii. 23. row 3. f. 3d—*R. cat. ed.* ii. at p. 228—*Pet.* 41. 8—*Amman.* 17 and 18. 1.

(*Stem* upright, very much branched, three feet high. E.) Whole *plant* set with fine silvery hairs. *Stems* reddish. *Leaflets* strap-spear-shaped, turned back at the edges, dark green above, pale underneath. *Leaves* hardly to be called winged, consisting of two pairs set crosswise, rising from the same point, with a terminating one divided down to the base into three open segments. *Blossom* yellow.

*Shrubby Cinquefoil*. On the south banks of the Tees below Thorpe, and Eggleston Abbey, and also near Greta Bridges, and Mickel-Force, Teesdale, Yorkshire. RAY.—Mr. Robson assures me that it still grows in great abundance upon these spots. (At Whinze Bridge, Durham. Mr. WINCH. E.) S. June.\*

P. Leaves winged, serrated; stem creeping; fruit-stalks Anserina. with 1 flower.

\* The beautiful appearance of its numerous flowers has gained it admittance into gardens. Besoms are made of it. Cows, horses, goats, and sheep eat it. Swine refuse it.

# ICOSANDRIA. POLYGYNIA: *Potentilla*.

*Curt.* 203—*E. bot.* 861—*Fl. dan.* 544—*Matth.* 1016—*Dod.* 600.  
 1—*Lob. ic.* i. 693. 1, *obs.* 395. 1—*Ger. em.* 993—*Park.* 593—  
*Ger.* 841—*Pet.* 41. 11—*Fuchs.* 619—*J. B.* ii. 398. h—  
*H. ox.* ii. 20. row 2. 4—*Trag.* 480—*Lonic.* i. 240. 2—  
*Blackw.* 6.

With long creeping runners. *Leaves* silvery and white underneath. *Leaflets* curiously folding themselves up. *Receptacle* hairy. *Blossom* yellow. (Dr. Smith observes (*E. bot.*) that sometimes the leaves are smooth and destitute of that silky down which gives them their chief beauty. *Stems* leafy, hairy, reddish. *E.*)

*Silver-weed.* *Wild Tansey.* *Goose Tansey.* Sides of paths and roads, and in low pastures, especially where water has stood during winter. P. June—July.\*

*rupes'tris.* P. Leaves winged, and by threes; stem upright, without creeping runners.

*Jacq. austr.* 114—*E. bot.* 2058—*Clus.* ii. 107. 1—*Ger. em.* 991—  
*Park.* 397. 7—*Pet.* 41. 6—*J. B.* ii. 598. d. 2—*H. ox.* ii. 20.  
 row 1. 1—*Kniph.* 11. *very luxuriant.*

*Leaflets* 5, 7, and 9. *Blossoms* white. *GOUAN.* Whole plant hairy. Stem forked above. *Leaves, serratures, and segments of the cup,* tipped with scarlet or purple. (*Leaves* winged, lyre-shaped. *Petals* inversely heart-shaped, white. *Styles* reddish. *Seeds* smooth, not furrowed. Stem nearly a foot high, striated, much resembling a *Fragaria*. *Fl. Brit.* *E.*)

*Strawberry Flowered Cinquefoil.* On the sides of Craig Wreidin, Montgomeryshire. P. July.

*(tridentata.* P. Leaves growing by threes, wedge-shaped; smooth on the upper surface, hairy underneath; 3-cleft at the end.

*Ait. H. Kew.* v. 2. t. 9.

At least equaling any of its genus in beauty. *Flowers* white. Thus we find this rare plant characterized in *Lin. Trans.* v. 10. p. 343. where it is said to have been recently discovered by Mr. G. DON, on a mountain called Werron, and on others to the westward, all in Angus-shire. *E.*)

\* The leaves are mildly astringent. Dried and powdered they have been given with success in agues. The usual dose is a meat spoonful of the powder every 3 hours between the fits. The roots in the winter time eat like parsneps. Swine are fond of them. Cows, horses, goats, and swine eat it. Sheep refuse it.



(2) *Leaves with finger-like divisions.*

P. Leaflets 5 together, wedge-shaped, snipt, cottony under-neath; stem upright.

*E. bot.* 89—*Fl. dan.* 865—*Matth.* 1020—*J. B.* ii, 398. c. 1—*H. ox.* ii. 19. 11.

*Stems* numerous, wood-like, reclining, a foot or more in length, cylindrical, downy, forked upwards. *Branches* axillary. *Leaf-stalks* of the lower leaves long, gradually shortening upwards. *Leaves* green above, white and cottony underneath; lower ones alternate, with five divisions; segments wedge-shaped, entire towards the base, but wing-cleft towards the ends. *Floral-leaves* with one or three strap-shaped entire segments. *Calyx* downy, as long as the blossom. *Petals* small, yellow, soon shedding. Mr. ROBSON.

*Silvery, or Hoary Cinquefoil.* Meadows and pastures in a gravelly soil. [Side of the turnpike road in the parish of Holt Castle, Worcestershire. Mr. BALLARD.—On Blackheath. Mr. JONES.—About Harrowgate plentiful. Mr. ROBSON.]

P. June—Sept.

P. Leaflets 5 together, serrated at the end; points of the serratures approaching to the margin; stem thread-like, trailing; receptacles hairy.

*Jacq. austr.* 115—*Kniph.* 8—*E. bot.* 1384—*Clus.* ii. 105. 1—*Ger. em.* 989. 10—*Park.* 396. 2—*J. B.* ii. 398. e. 2—*Trag.* 507—*Ger.* 839—*Fuchs.* 623—*J. B.* ii. 398. e. 1.

*Leaflets* entire, except towards the end; serratures 5 to 7, slightly downy above, underneath paler and more downy, with the veins and edges white with a silky down. *Leaf-stalks* downy. *Fruit-stalks* long, slender, downy, 1-flowered. *Petals* white, inversely heart-shaped, as long as the calyx. Mr. WOODWARD.

*White Cinquefoil.* In Wales.

P. July—Aug.

P. Leaflets 5 together; stem creeping; fruit-stalks 1-flowered. rep'tans.

*E. bot.* 862—*Fl. dan.* 1164—*Kniph.* 7—*Ludw.* 116—*Curt.*—*Woodv.* 59—*Walc.*—*Lonic.* i. 216. 2—*Fuchs.* 624—*J. B.* ii. 397—*Lonic.* i. 216. 1—*Blackw.* 454—*Matth.* 1018—*Ger.* 836. 1—*Dod.* 116. 1—*Lob. ic.* 690. 1. obs. 393. 3—*Ger. em.* 987. 1—*Pet.* 41, 3—*Park.* 399, 1—*H. ox.* ii. 19. 7.

(*Peduncles* solitary, longer than the leaves, single-flowered. *Calyx* hairy. *Petals* yellow. E.) *Stem* and *fruit-stalks* cylindrical. *Leaves*, segments ending in purplish points. *Leaflets* sometimes 3. *Flower-scales* spear-egg-shaped, in pairs. The *Tormentilla reptans* has been thought a var. of this, but not mention other differences, the *Potentilla reptans* has a creeping stem striking out roots at the joints, the *Tormentilla reptans* a trailing stem not striking root. M. AFZELIUS.—(Mr. Woods, in *Bot. Guide*, still inclines to the former opinion, and Mr. Borrer there observes that the flowers often lose a fifth part. The further confirmation Mr. Dawson Turner adds, that a plant of *Tormentilla reptans* transplanted into his garden three years ago, has by culture gradually approached nearer and nearer to the *Potentilla*, till it is now hardly to be distinguished from it, and of its flowers at this time almost equal proportions bear four or five petals. E.)

Common Creeping Cinquefoil. Five-leaved Grass. Meadows, pastures and road sides. P. June—Sept.\*

ver'na.

P. Root-leaves 5 together, sharply serrated, dented at the end; stem-leaves 3 together; stem declining.

E. bot. 37—Kniph. 8—Allioni 24. 2—Clus. ii. 106. 2—Ger. em. 988. 8—J. B. ii. 398. a. 1—Crantz. ii. 1. 1.

Root below clothed with broad rusty coloured scales, but throwing out several stems from its head. *Stems* not creeping, ascending, purplish, very much branched, thread-like, scarcely perceptibly sprinkled with hairs, with many flowers. *Leaf-scales* entire, broad, pointed, growing to the leaf-stalk. *Leaf-stalks* long, somewhat hairy. *Leaflets* sitting, naked, deeply serrated towards the end, with the serratures somewhat hairy; the uppermost with shorter serratures, and, as it were, dented at the end; the lateral ones shorter, broader, and often cloven. *Floral-leaves* broader than the leaf-scales, with often three sitting leaflets. *Fruit-stalks* solitary, long, somewhat hairy. *Petals* yellow, nicked, with sometimes a tawny spot at the base, sometimes without. *Stamens* and *pistils* yellow. *Plant* when grown to maturity nearly smooth. LINN. Whole *plant* beset with soft, shining, silky hairs. *Root-leaves* roundish, on long leaf-stalks. *Leaflets* wedge-shaped, sitting, serrated, and truly dented at the top, entire downwards, the upper one the largest. *Stems* numerous. *Stem-leaves* 3-cleft. *Leaf-scales* in pairs, spear-shaped, embracing the stem. *Fruit-stalks* terminating and axillary, long, slender, each with one flower. *Floral-leaves* spear-shaped.

\* The red cortical part of the root is mildly astringent and antiseptic. A decoction of it is a good gargle for loose teeth and spongy gums.—Horses, cows, goats, and sheep eat it.

*Calyx* segments not very unequal, half as long as the blossom.  
*Petals* inversely heart-shaped. Mr. WOODWARD.

*Spring Cinquefoil.* Rocky mountainous pastures, and barren meadows. Near Preston. Giggleswick, Yorkshire; Gloggaeth, Caernarvonshire. PENN.—Top of Craig-cailleach, near Finarig, Breadalbane. [King's Park, Edinburgh, on the south west side of Arthur's Seat. HOPE.—And Salisbury Craigs. ST.—Near Carr End, Wensleydale, Yorkshire. CURTIS.—Canham Heath, near Bury, Suffolk. Mr. WOODWARD.—Braid hills and Craig Lochart, near Edinburgh. Mr. BROWN.—Wick Cliffs. Mr. SWAYNE.] P. April—June.

P. Root-leaves 5 together, serrated, pointed; stem-leaves au'rea. 5 together; stem declining.

*E. bot.* 561—*Fl. dan.* 114—*Hall. hist. t.* 21, right hand fig.; *enum.* 6. 4—*Clus.* ii. 106. 3—*Ger. em.* 989. 9—*Park.* 399. 4—*J. B.* ii. 398. a. 2—*Pet.* 41. 4.

(Stems about a span high, nearly upright, branched, leafy, hairy. *Seeds* furrowed lengthwise. E.) *Petals* bright yellow, with an orange-coloured blotch at the base. *Leaves* with three or five segments at the end, but not dented as in the *P. verna*.

*Golden Cinquefoil.* Pastures near Kippax, three miles from Pontefract. RAY. [Rocks of Malghyrdy, Ben Teskerney, Ben Lawers, and Craig Cailleach. Mr. BROWN.]—(Rocks above Gordale Scar, Yorkshire. Mr. BRUNTON, and Whince Bridge, Teesdale. Rev. J. HARRIMAN, in *Bot. Guide.* E.)

P. June—July—Aug.

Mr. Curtis thinks that Ray's plant is no other than the *P. verna*. It was inserted in the *Fl. Angl.* as the *P. opaca*, but Mr. Afzelius convinced me that the plant found in our Botanic Gardens under that name is really the *P. aurea*. It has been suggested that this latter is only a variety of *P. verna*, but its habit is very different.

TORMENTIL'LA. *Cal.* 8-cleft: *petals* 4: *seeds* roundish, naked, fixed to a small juiceless receptacle.

T. Stem somewhat ascending; leaves sitting.

officina'lis.

*Kniph.* 6—*Ludw.* 174—*Curt.* 337—*E. bot.* 863—*Blackw.* 445—*Fl. dan.* 589—*Woodv.* 27—*Park.* 394. 1—*Fuchs.* 260—*J. B.* ii. 398. g. 2—*Sheldr.* 47—*Trag.* 503—*Matth.* 947—*Dod.* 118—*Lob. obs.* 395. 2, ic. 696. 2—*Ger. em.* 992—*H. ex.* ii. 19. 13. *Pet.* 41. 9—*Ger.* 840.



*Styles* (in Lapland) generally eight, often sixteen, and sometimes four. LINN. *Stems* generally declining. *Flowering branches* ascending. *Leaf-scales* in pairs, wedge-shaped, deeply divided into three or more lobes. MR. WOODWARD. *Stem* trailing, and at length ascending. *Leaves* of a beautiful green, three together. *Root-leaves* on leaf-stalks. *Leaf-stalks* shorter than the breadth of the leaflets. *Leaflets* serrated. *Calyx*, the four smaller segments on the outside of the other four. *Petals* sometimes five, of a fine yellow, with an orange-coloured blotch at the base; claws very short. *Stamens* fourteen to eighteen. *Pistils* six to sixteen. *Receptacle* woolly. (*Root* large and woody. *Flowers* sometimes, though rarely, double. *Stem* branched, sometimes found with a double flower.

Several highly respectable Botanists have thought that the *Potentilla* and *Tormentilla* ought to constitute but one genus, the only difference consisting in the number of the petals and of the clefts of the calyx; but after mentioning this circumstance, I think their present disposition more favourable for investigation. Unwilling as we are to change a Linnæan name, his epithet *erecta* (upright) given to the present species, is so very erroneous, and so calculated to mislead, that we have chosen with Mr. Curtis to call it *T. officinalis*.

*Septfoil. Common Tormentil. T. erecta.* Sp. pl. *Potentilla sylvestris.* NECKAR. *Potentilla Tormentilla.* Bot. Arr. ed. 2. Moors, barren pastures, and shady places: P. June—Sept.\*

rep'tans. T. Stem trailing: leaves on leaf-stalks.

*E. bot.* 864—Walc.—Plot. oxf. 9. 5. at. p. 146—Pet. 41. 10.

All the *leaves* on leaf-stalks. *Leaflets* three together, wedge-shaped, generally on short leaf-stalks, serrated upwards, entire at the base; the upper frequently three-cleft. *Stipule* spear-shaped, entire, with two or three clefts. (*Stem* undivided, Segments of the *calyx* egg-spear-shaped, unequal, hairy. *Petals* roundish, heart-shaped, yellow. E.)

When cultivated in a garden, it frequently varies with four and five petals, which probably induced Mr. Hudson to think it a var. of *Potentilla reptans*. If merely a variety, it must

\* The roots may rank with the strongest vegetable astringents, and as such have a place in the modern practice of physic. They are used in several countries to tan leather. Farmers find them very efficacious in the dysenteries of cattle. They dye red. Cows, goats, sheep, and swine eat it. Horses refuse it. LINN. A horse eat it (M. Hermestadt of Berlin, asserts that a pound and half of Tormentil will tan as much dry hide as seven pounds of Oak bark. *Month. Mag.* v. 19. Bulleyn, in his book of simples, asserts, on the authority of experience of the Norfolk shepherds, that Tormentil in pastures prevents that very destructive disease the Rot in sheep. E.)

of *Tormentilla officinalis*, but I believe it to be a distinct species. WOODWARD. In a garden sometimes producing five petals, and ten clefts in the calyx, which confirms the opinion of those who maintain that *Potentilla* and *Tormentilla* are not distinct genera. Independent of the generic character, this species, as Mr. Afzelius remarked to me, differs from the *P. reptans*, in having a *trailing* stem which does not strike root at the joints, whilst that has a creeping stem which takes root at every joint. (Whole herb hairy. Dr. Smith thinks this plant entirely different from the preceding species, and equally so from every Linnæan *Potentilla*. E.)

*Trailing Tormentil.* Woods and sandy barren pastures. About Manchester. Mr. CALEY. Lakenham, near Norwich. Mr. CROWE. Berkhamstead, Herts. Mr. WOODWARD.] (At Bootle Land-mark, near Liverpool. Dr. BOSTOCK. E.)  
P. June—July.

GE'UM. *Cal.* 10-cleft: *petals* 5: *styles* terminating: *seed* with a jointed awn: *recept.* pillar-like.

Flowers upright: fruit globular, woolly; awns hooked, urba'num, bare; root-leaves lyre-shaped; stem-leaves in threes.  
AIT. *H. Kew.*

*E. bot.* 1400—*Ludw.* 36—*Curt.* 113—*Kniph.* 9—*Blackw.* 253—*Walc.—Fl. dan.* 672—*Fuchs.* 384—*Woodv.* 259—*Pet.* 40. 1—*Ger.* 842. 1—*Matth.* 984—*Clus.* ii. 202. 2—*Dod.* 137. 1—*Lob. ic.* 693. 2, *obs.* 396. 2—*Ger. em.* 994. 1—*Park.* 136. 1—*H. ox.* iv. 26, row 2. 1 and 2.

*Stem* somewhat angular, (about two feet high, hairy, upright, branched towards the top, leafy. E.) *Leaves* winged, hairy, with two pair of leaflets; the lower pair circular, jagged and toothed, unequal; the upper pair egg-spear-shaped, jagged and toothed; and an odd one larger than the rest, frequently even into three segments. The first pair Linnæus considers stipulas. *Petals* yellow. *Germens* hairy. *Styles* smooth, purple, with a double flexure towards the end.

*Common Avens*, or *Herb Bennet*. Woods and hedges.

P. June—Aug.\*

\* The roots, gathered in the Spring, before the stem grows up, and put into ale, give it a pleasant flavour, and prevent its turning sour. Infused in wine is a good stomachic. Its taste is mildly austere and aromatic, especially when it grows in warm dry situations; but, in shady and moist places, it has little virtue. Cows, goats, sheep, and swine eat

Var. 2. *large-flowered*. HUDS.

*Fuchs.* 385—*Trag.* 37.

Tedford Wood in the Welds, Lincolnshire, and in Cambridgeshire. RAY.

rivale.

D. Flowers nodding; fruit oblong; awns feathered, twisted; petals blunt, roundish wedge-shaped; leaves winged. AIT H. *Kew.*

*E. bot.* 106—*Fl. dan.* 722—*Kniph.* 1—*Lob. ic.* i. 694—*Clus.* ii. 203. 1—*Ger. em.* 995. 4—*Pet.* 40. 3—*H. or.* iv. 26. 7—*J. B.* ii. 398. n. 2.

*Awns* hairy. LINN. *Upper-leaves* with three or four lobes. *Leaf-scales* undivided, or jagged. *Fruit-stalks* purplish, becoming less bent when the seeds ripen. *Calyx* oblong, flat at the base, greenish purple, cloven half way down. *Blossoms* streaked, of a dilute deadish red. (*Root* horizontal, rather woody. *Stem* a foot high, upright, branches at the top, nodding. *Root-leaves* lyre-shaped, plaited, cut, serrated, hairy. *Fl. Brit. E.*)

*Water Avens*, or *Bennet*. When cultivated in a dry soil the flowers are apt to become double, or proliferous.

Var. 2. Flowers double; sometimes proliferous. MR. ROBSON.

Moistish mountainous pastures about Settle, and Ingleton, in Yorkshire. RAY. CURTIS.—And about Snowdon. [Sides of rivers and mountains in the North, common. MR. WOOD.—Near Norwich. MR. PITCHFORD.—Marsham, near Swaffham. MR. WOODWARD.—Water of Leith, near Edinburgh.—County of Durham, common. MR. ROBSON.—In a meadow at Aldridge, plentiful. MR. PITT.] (Below Childwall, near Liverpool. MR. SHEPHERD. E.) P. June—July.\*

intermedium.

G. Flowers large, yellow.—Dr. Smith conjectures this to be a hybrid between *G. rivale* and *urbanum*. Its awns are hairy as in the former, its habit, colour, and size more resembling the latter.

MR. ROBSON says. "I have cultivated this *Geum* some years, and find no alteration in it. I saw it this spring in Mr

it. Horses are not fond of it. (Dr. Swediaur strongly recommends the root of this plant gathered early in the spring from a dry soil, as an excellent substitute for the Cort Cinchon, in intermittent fevers. *Mat. Med.* p. 99. E.)

\* The powdered root will cure tertian agues, and is daily used for that purpose by the Canadians. Sheep and goats eat it. Cows, horses, and swine are not fond of it. LINN. It is made use of to cure rosy malt liquor. ST.



Curtis's garden, named *G. intermedium*, where it has been long cultivated, and Mr. Curtis agrees with me in opinion that it is a distinct species."

*G. rivale* β. Fl. Brit. [Near Darlington, frequent. Mr. ROBSON.—About half a mile from Sawlow, on the road to Giggleswick, Yorkshire. Mr. CALEY.—At Matlock. Dr. SMITH. *E. bot.*] Sept.

**DRY'AS.** *Cal.* 5, or 10-cleft: *petals* 5 or 8: *seeds* with tails, formed by the feathered style: *receptacle* broad and flat.

D. Petals eight; leaves simple, serrated.

octope'tala.

*E. bot.* 451—*Penn. hebr.* 33. *at. p.* 285—*Fl. dan.* 31—*Clus.* i. 351. 2—*Ger. em.* 659. 6—*Ger.* 533. 4—*Lob. adv.* 209, *ic.* i. 495. 1—*Gisee.* iii. 66—*Lob. obs.* 260. 2, *ic.* 495. 2—*Park.* 106. 1.

*Leaves* very blunt, and almost nicked. *Root-leaves* egg-shaped, bent back at the edge, perennial, white underneath. *Stalk* bare, with one flower. *Blossoms* flat, falling off, of a snowy white. *Seeds* oblong. LINN. (*Root* woody. *Stems* decumbent, intangled, woody; branches leafy, upright. *Leaves* on leaf-stalks, egg-shaped, smooth and shining above, woolly beneath. *Fruit-stalks* solitary, upright, very long. woolly, towards the end rough with glands. *Calyx* glandulous, hairy, with eight segments, nearly equal. *Fl. Brit.* E.)

*Mountain Avens.* High mountains. On those between Gort and Galloway, and near Sligo, in Ireland; and on those in Breadalbane, Isle of Skye, Ross-shire; Sutherland, and Argyleshire. RAY, and Messrs. STUART and LIGHTFOOT.—On Arncliffe Clowder, in Littendale, near Kilnsay, Yorkshire. CURTIS.—Near Settle, Yorkshire. Dr. FELL.—Stonecliffe, near Littendale, in the Craven of Yorkshire. Mr. WOOD.] P. June—Aug.

**CO'MARUM.** *Cal.* 10-cleft, permanent; segments alternately smaller: *petals* 5: *seeds* naked, smooth: *recept.* globular: fleshy, woolly, permanent.

C. Leaves winged; petals smaller than the calyx.

palus'tre.

## POLYANDRIA.

*Dicks. h. s.*—*Kniph. 9-Fl. dan.* 636—*E. bot.* 172—*Ger.* 836.  
*4-J. B. ii.* 398. *c.* 2—*Dod.* 117. 2—*Lob. ic.* 691. 1—*Ger. em.* 987. 4.

(*Stems* decumbent at the base, cylindrical, smooth, leafy. *Leaves* on long leaf-stalks, oblong, serrated, hoary underneath. *E.*) The *calyx*, *petals*, *stamens*, *styles* and *receptacles* of a dark red purple, approaching to blackness.

*Marsh Cinquefoil. Purple Marshlocks.* Muddy putrid marshes. Giggleswick Tarn, near Settle. CURTIS.—Marl pits near Dalton. Mr. ATKINSON.—Norfolk, not unfrequent. Mr. WOODWARD.—Boggy places near Bromsgrove Lickey, Worcestershire. NASH.—Bogs in the county of Durham, frequent. Mr. ROBSON.—(Bootle Marsh, near Liverpool. Dr. BOSTOCK. E.)—South west side of Edgbaston Pool, near Birmingham.

P. June—July.

Var. 2. Differs only in the leaves being hairy, which hairiness also it loses in the following year. LINN.\*

*Pluk.* 212. 2—*Pet.* 41. 2.

## CLASS XIII.

## POLYANDRIA.

## MONOGYNIA.

(1) *Petals* 4.

PAPA'VER. *Calyx* 2-leaved: *Capsule* 1-celled; crowned.

CHELIDO'NIUM. *Calyx* 2-leaved: *S. vess.* a long *Pod.*

ACTÆ'A. *Calyx* 4-leaved: *Berry* 1-celled: *Seeds* in a double row.

(2) *Petals* 5.

CIS'TUS. *Caps.* nearly globular: *Cal.* 5-leaved: 2 leaflets smaller.

\* The root dyes a dirty red. The Irish rub their milking pails with it, to make the milk appear thicker and richer. Goats eat it. Cows and sheep are not fond of it. Horses and swine refuse it.

TIL'IA. *Caps.* 5-celled; like leather: *Seed* 1: *Cal.* deciduous.

[*Delphinium Consolida.*]

(3) *Petals many.*

NYMPHÆ'A. *Berry* many celled; outer coat like bark; *Cal.* large.

## DIGYNIA.

(PCEONIA. *Cal.* of 5 leaves: *Petals* 5: *Styles* none; *Follicles* superior, with many seeds.

POTE'RUM. *Flowers* M. and F. on the same plant. *Cal.* 4-leaved: *Bloss.* with 4 divisions.

F. *Berry* formed of the indurated tube of the blossom.

## TRIGYNIA.

DELPHIN'IUM. *Cal.* none: *Bloss.* 5 petals: upper petal horned-shaped behind: *Nectary* cloven; sitting.

[*Chelidonium hybridum.* *Reseda Luteola.*]

## TETRAGYNIA.

[*Myriophyllum verticillatum.*]

## PENTAGYNIA.

AQUILE'GIA. *Cal.* none: *Bloss.* 5 petals: *Nectaries* 5; horned in the lower part.

[*Papaver cambricum.*]

## HEXAGYNIA.

STRATIO'TES. *Cal.* with 3 divisions: *Bloss.* 3 petals: *Berry* 6-celled; in a sheath.

[*Papaver cambricum.*]



## POLYGYNIA.

ZOSTERA. *Spike-stalk* strap-shaped; bearing fruit on one side: *Cal.* none: *Bloss.* none: *Stam.* alternate: *Seed* solitary; alternate.

CLEMATIS. *Cal.* none: *Bloss.* 4 petals: *Seeds* many; awned.

THALICTRUM. *Cal.* none: *Bloss.* 4 or 5 petals: *Seeds* many; awnless; naked.

ARUM. *Sheath* 1 leaf; cone-shaped: *Sheath-Fruit-stalk*, naked above; bearing *Pistils* below, and *Stamens* in the middle.

HELLEBORUS. *Cal.* none: *Bloss.* 5 petals; permanent: *Nectaries* many: *Caps.* many seeded.

CALTHA. *Cal.* none: *Bloss.* 5 petals: *Caps.* many: *Nectaries* none.

ANEMONE. *Cal.* none: *Bloss.* 6 petals: *Seeds* many.

TROLLIUS. *Cal.* none: *Bloss.* 11 petals: *Nectaries* strap-shaped: *Caps.* many-seeded.

SAGITTARIA. *Flowers* M. and F. on the same plant: *Cal.* 3 leaves: *Bloss.* 3 petals.

M. *Filaments* about 24.

F. *Seeds* many; naked.

RANUNCULUS. *Cal.* 5 (or 3) leaves: *Bloss.* 5 (or 8) petals: *Seeds* many: *Petals* with a nectary in the claw.

ADONIS. *Cal.* 5 leaves: *Bloss.* 5 or 10 petals: *Seeds* many; angular; covered with a thick skin.

[*Nymphæa alba*, *Papaver somniferum*.]

## MONOGYNIA.

ACTÆA. *Bloss.* 4 petals: *cal.* 4 leaves: *berry* 1-celled: *seeds* semi-circular.

*spica'ta*.

A. Bunch egg-shaped; fruit berry-like.

*E. bot.* 918—*Blackw.* 565—*Fl. dan.* 498—*Clus.* ii. 86. 2—*Dod.* 402. 1—*Lob. obs.* 389. 1. and *ic.* i. 682. 1—*Ger. em.* 979—*Park.* 379. 1—*Ger.* 829—*H. or.* i. 2. 8—*J. B.* iii. 660. 1.

(The four concave leaves of the *calyx* fall off very soon after they expand. *E. bot.* Plant a foot and half high, smooth; leaves growing triply three together, sharp-pointed, deeply serrated. *Stamens* thread-shaped, as long as the petals. *Summit* a knob, sitting. *Fl. Brit. E.*) *Petals* rhomb-shaped, flat, membranaceous. LINN. Blossoms white. Berries black, juicy.

*Herb Christopher. Bane-berries.* Woods and shady places. Near Malham Cove, and in a wood near Clapham, Yorkshire. [Whitfell Gill, or Arthur's Foss, near Askrig, Yorkshire. CURTIS. On Ingleborough. Mr. WOODWARD. And in the fissures of the very curious natural pavement of limestone at the foot of it. ST. About Thorp Arch, and in Wensley Dale, near Askrig, Yorkshire. Mr. WOOD.] (Mountainous pastures above Troutbeck, near Ambleside. Mr. WOODWARD. In a thick wood two miles from Thorndon, Essex. BLACKSTONE. Sandwicke, Ullswater. HUTCHINSON. E.)

P. May—June.\*

**CHELIDO'NIUM.** *Bloss.* 4 petals; *cal.* 2 leaves: *pod* strap-shaped; *receptacle* of the seeds (generally) lattice-like.

**C.** Fruit-stalks forming umbels.

ma'jus.

*Ludw.* 132—*Kniph.* 8—*Fl. dan.* 542—*E. bot.* 1581—*Woodv.* 263—*Blackw.* 91—*Mill.* 92. 1—*Walc.—Fuchs.* 865—*J. B.* iii. 482—*Trag.* 107—*Ger.* 911—*Clus.* ii. 203. 1—*Dod.* 48—*Lob. obs.* 440. 1, and *ic.* i. 760. 2—*Ger. em.* 1069. 1—*Park.* 617. 1—*Lonic.* i. 165. 3—*Matth.* 628—*H. or.* iii. 2. *row* 1. 2.

(*Stem* two feet high, branched. *Calyx* somewhat hairy, deciduous. *Seeds* black, shining, with a white crest. *Fl. Brit. E.*) *Leaves* winged, segments nearly circular, scalloped. *Flowers* yellow. *Stamens* sometimes not more than twenty. *Seed-vessel* cylindrical, but compressed.

\* This plant is a powerful repellent. The root is useful in some nervous cases, but it must be administered with caution. The berries are poisonous in a very high degree. It is said that toads, allured by the fetid smell of this plant, resort to it; but it grows in shady places, and toads are fond of damp and shady situations. Sheep and goats eat it; cows, horses, and swine refuse it.

POLYANDRIA. MONOGYNIA. *Chelidonium*.

*Greater, or Common Celandine.* [Hedges, rough shady places, on rubbish and uncultivated ground.] P. May—July.

Var. 2. Jagged-leaved.

*Kniph.* 8, first fig.—*Fl. dan.* 676—*Mill.* 92. 2—*J. B.* iii. 483  
—*Clus.* ii. 203—*Ger. em.* 1069. 2—*Park.* 617. 2.

*C. laciniatum.* Leaves with 5 lobes. Lobes narrow, sharply jagged. *MILL.* who, during the cultivation of it for upwards of thirty years, could never perceive any alteration in it. *ST.*

Among the ruins of the Duke of Leeds's seat at Wimbleton.\*

lu'teum.

C. Fruit-stalks with 1 flower; leaves embracing the stem, indented; stem smooth.

*Fl. dan.* 585—*E. bot.* 8—*Fuchs.* 520—*J. B.* iii. 398—*Kniph.* 4—*Trag.* 123—*Clus.* ii. 91. 1—*Dod.* 448—*Lob. obs.* 141. 1. and *ic.* i. 270. 2—*Ger. em.* 367. 1—*Ger.* 294. 1—*Pet.* 52. 7—*Matth.* 1061—*Lonic.* i. 82—*H. ox.* iii. 14. 1. f. 1—*Park.* 262. 1 and 2.

*Plant* sea-green. *Leaves* roughish; *root-leaves* with winged clefts; those of the stem only lobed. *Blossom* yellow. *Pods* rough, separated by a partition into cells. *LINN.* *Stem* much branched. *Stem-leaves* embracing the stem, deeply indented, rough above, smooth beneath. *Branches* forked. *Fruit-stalks* thick, slightly hairy, with one or two flowers. *Calyx* large, oval, hairy. *Petals* large, egg-shaped, yellow. *Pods* very long, bent in various directions, terminated by an arrow-shaped summit. *WOODWARD.* *Pods* often ten or twelve inches long.—It is remarkable that a high wind does not affect the petals, and yet it is difficult to pluck the flowers without some of them falling off. *Mr. ATKINSON.*

*Yellow-horned Poppy.* *Sea Celandine.* *Glaucium luteum.* *GÆRTN.* *Fl. Brit.* *Chelidnium Glaucium.* *WITH.* Ed. 4. Sandy sea shores. [Norfolk and Suffolk coast, particularly about Dunwich; and Cartmel Sands and Roosebeck, Lancashire. *Mr. WOODWARD.* (North Shore, Liverpool, near the mouth of the river Alt. *Mr. SHEPHERD.* E.) Isle of Wight. *ST.* Wal-

\* The juice of every part of this plant is yellow and very acrimonious. It cures tetters and ringworms. Diluted with milk it consumes white opake spots upon the eyes. It destroys warts and cures the itch. There is no doubt but a medicine of such activity will one day be converted to more important purposes.



ney Isle. Mr. ATKINSON. Sea coast, Teignmouth, (very abundant on the Kentish shores, particularly about Dover, &c. E.)  
A. July—Aug.\*

C. Fruit-stalks with 1 flower; leaves sitting, wing-cleft; phœni'cium. stem rough with hairs.

*Curt. Glaucium—E. bot.* 1433.—*Clus.* ii. 91. 2—*Dod.* 449.  
1—*Lob. obs.* 141. 2 and *ic.* i. 271. 1—*Ger. em.* 367. 2—*Ger.* 294. 2—*J. B.* iii. 399. 1.

*Plant* sea-green. *Root* spindle-shaped. *Root-leaves* in a circle, on short leaf-stalks; wings alternate, indented at the ends, the upper ones largest, the terminating ones broad, blunt, with three or four indentures, hairy. *Stem* slightly hairy, furrowed, forked, branched. *Stem-leaves* half embracing the stem alternate. *Fruit-stalks* terminating, and from the bosom of the upper leaves, slightly hairy, with sometimes one or two leaves, similar to those of the stem but smaller. *Petals* oval, deep orange, veined with an elliptical purplish spot at the base of each. *Capsule* very long, nearly straight, terminated by a blunt knob, very hairy. WOODWARD.

*Red Celandine. Red Horned Poppy. Glaucium phœnicum.*  
GÆRTN. Fl. Brit. *Chelidonium corniculatum*. LINN. HUDS.  
WITH. Ed. 4. HULL. Sandy corn fields, Norfolk, discovered by  
Mr. STILLINGFLEET, (but Dr. Smith observes it has never  
been found by any person since. E.) A. July—Aug.

C. Fruit-stalks with 1 flower; leaves wing-cleft; seg-viola'ceum.ments strap-shaped; stem smooth; pod with 3 valves.

*E. bot.* 201—*Kniph.* 10—*Clus.* ii. 92. 2—*Dod.* 449. 2—*Lob.* 141. 3. and *ic.* 272. 1—*Ger. em.* 367. 4—*Park.* 262. 3—*J. B.* iii. 399. 2—*Pet.* 52. 8—*H. ox.* iii. 14. 2. f. 2.

*Summits* three. *Pods* with three furrows. *Leaves* very much like those of *Papaver hybridum*. *Capsule* two inches

\* (This species, together with the two immediately following, have been made by Gærtner to constitute a new Genus, under the name of GLAUCIUM, which appears to rest chiefly on the pod having two cells instead of one. and the seeds being globular or dotted, instead of crested. We are unwilling to separate plants which bear so very obvious a resemblance to each other, and seem intended by nature to form a natural genus. We do not hesitate, however, to acknowledge the propriety of the specific names originally introduced by the more ancient Naturalists, and presume to adopt that part of the new arrangement without dismembering the Genus. E)

## OLYANDRIA. MONOGYNIA. Papaver.

long, somewhat crooked, rough with a few hairs. *Summit* with three rays. LYONS. *Root* spindle-shaped, slender. *Root-leaves* on leaf-stalks. *Stem-leaves* sitting, simply or doubly winged; divisions strap-shaped, nearly equal, smooth. *Stem* slightly hairy. *Fruit-stalks* smooth. *Calyx* oval, slightly hairy. *Petals* egg-shaped, deep purple. *Pods* long, smooth, terminated with a roundish knob. WOODWARD. (Linnaeus suspected this plant might be a hybrid between a *Chelidonium* and the *Papaver Argemone*. E.)

*Violet Celandine. Violet Horned Poppy. Glaucium violaceum.* JUSS. *Fl. Brit. Chelidonium hybridum.* WITH. Ed. 4. *Chelidonium violaceum.* LAMARK. Sandy corn fields. Between Swaffham and Burwell, Cambridgeshire. RAY. RELHAN. (About four miles from Aylesham, towards Cromer, Norfolk. Mr. ROSE. E.) A. May—June.

**PAPAVER.** *Bloss.* 4 petals: *cal.* 2 leaves: *summit* target-shaped, radiated, scalloped: *caps.* (often) many celled, opening with holes underneath the permanent summit.

(1) *Capsules rough with hairs.*

hy'bridum. P. Capsule nearly globular, knobby, bristly; stem leafy, many-flowered.

*E. bot.* 43—*Lob. obs.* 144. 1. and *ic.* i. 276. 1—*Ger. em.* 373. 1—*Park.* 369. 1—*J. B.* iii. 396. 1—*Pet.* 52. 5—*H. ox.* iii. 14. 9—*Ger.* 300. 1.

*Capsule* with six furrows like a melon. *Summit* six-cornered. LINN. Furrows from six to ten. *Summit*, rays as many. Mr. ROBSON. *Leaves* doubly wing-cleft; *segments* strap-shaped, nearly equal, the terminating one three-cleft; nearly smooth above, nerves underneath with strong hairs pointing upwards. *Branches* and *fruit-stalks* channeled, with strong hairs pointing upwards. *Capsules* roundish-oval. WOODWARD. *Petals* small, dark dirty scarlet. *Filaments* deep purple. *Anthers* pleasant blue. RELHAN. (*Stem* slender, branched, leafy, rough, with hairs laid flat. *Branches* single flowered, naked. *Calyx* armed with brown bristles. *Fl. Brit.* E.)

*Round rough-headed Poppy. Mongrel Poppy.* Corn fields. [Near Norwich. Mr. PITCHFORD. At Wells, Norfolk. Mr. CROWE. About Durham. Mr. ROBSON.] (At Darent, near Dartford. Mr. LEWIN. Near Fulwell and Sunderland. Mr. WINCH, in *Bot. Guide.* Malton Cornfields, Yorkshire. TEESDALE. E.) A. June—July.

P. Capsule club-shaped, bristly; stem leafy, many flowered. Argemone.

*E. bot.* 643—*Fl. dan.* 867—*Curt.* 313—*J. R.* iii. 396. 2—*Lob. obs.* 144. 2. and *ic.* i. 276. 2—*Ger. em.* 373. 2—*H. ox.* iii. 14. 10—*Pet.* 52. 6—*Ger.* 300. 2.

*Leaves* with three divisions, wing-cleft. *Fruit-stalks* rough. *Calyx* hairy. LINN. *Leaves* winged; *wings* opposite, decurrent, spear-shaped, deeply wing-cleft, terminating one three-cleft; nearly smooth above, nerves and leaf-stalks rough underneath with diverging hairs. *Stems* and *fruit-stalks* with hairs pointing upwards. *Petals* wedge-shaped, narrow. *Capsule* elliptical, ribbed, set with strong hairs. WOODWARD. *Root-leaves* with a broad mid-rib, set with three or four pair of wings, and an odd one, each of which is cloven into three. *Petals* inversely egg-shaped, scarlet, with a black spot towards the base, white before the calyx opens. *Germen* inversely conical. *Summit*, rays five to eight. *Capsule* cells as many as rays on the summit; bristles strong, white, pointing upwards. (In general habit resembling *P. hybridum*, but the segments of the leaves broader. It sometimes appears with a double flower. E.)

*Long-rough-headed Poppy.* Cornfields. A. June—July.

P. Capsule nearly cylindrical, bristly; stem supporting a maritimum. single flower.

Whole plant set with bristly hairs laid flat. *Stem-leaves* two, sitting, wing-cleft. *Root-leaves* wing-cleft; *leaf-stalks* longer than the leaves. *Petals* wedge-shaped, scarlet, black at the base. Sent to me by Mr. Atkinson, from Roosebeck, where it grows in great abundance in a sandy soil, and hath, he says, invariably only one flower upon a plant. I collected similar specimens by the sea side at Weymouth in May. All the plants I have seen are only about four inches high. If, when cultivated in a good soil it still continue to bear only a single flower, there can be no doubt of it being a distinct species. In reply to my further enquiries, Mr. Atkinson says, "The Poppy with one flower upon a plant I have seen growing in gardens near the coast very luxuriantly, with this difference only, that the leaves are not quite so rough as when growing upon the sand banks."

A. June—July.

(2) *Capsules smooth.*

P. Capsules smooth, urn-shaped; stem hairy, many-flowered; leaves wing-cleft, jagged. Rhæas.



## POLYANDRIA. MONOGYNIA. Papaver.

*Curt.* 215—*E. bot.* 645—*Blackw.* 560—*Ludw.* 17—*Kniph.* 5, the 2d. fig.—*Woodv.* 186—*Fuehs.* 516—*Trag.* 120—*Ger.* 299. 1—*Lonic.* i. 81—*H. ox.* iii. 14. 6—*Dod.* 447—*Lob. obs.* 143. and *ic.* i. 275—*Ger. em.* 371. 1—*Park.* 366. 4—*Pet.* 52. 2—*Matth.* 1057—*Blackw.* 2.

*Stem*, hairs expanding. LINN. *Leaves* hairy: leaflets strap-shaped, indented, serrated. *Fruit-stalks* long; hairs expanding. LYONS. *Stem* cylindrical, branched. *Capsule* not globular but urn-shaped, and nearly as broad as it is long. *Summit* with ten or twelve rays. *Blossom* bright full scarlet.

*Corn*, or *Red Poppy*. *Corn Rose*. *Cop-rose*. Among corn (frequent in most parts of this island, but in the Southern counties the corn-lands are most brilliantly bordered with these poppies, particularly in Kent and Sussex. The Rev. S. Dickenson observes that it is rarely, if ever, to be met with in Shropshire, nor have I been able to find a single plant of it in Staffordshire; the common Corn Poppy of these counties being *P. dubium*. E.)

A. June—Aug.\*

A variety frequently occurs with an oval shining black spot at the base of each petal, 4 lines long and 3 wide. From this originate many beautiful varieties frequent in gardens. WOODWARD,

du'bium.

P. Capsules oblong, smooth; stem many-flowered; fruit-stalks with bristles laid to; leaves wing-cleft, snipt.

*E. bot.* 644—*Curt.* 297—*Walc.*—*H. ox.* iii. 14. 11—*Pet.* 52. 3.

*Stem* (two feet high, E.) woolly below, more and more bristly upwards, the bristles on the fruit-stalks laid close. *Leaves*, segments entire, edges and mid-ribs hairy. *Capsules* conical, much longer than broad; rays of the summit from 6 to 10. (As the capsules ripen the lower part curiously shrinks from the lid sufficiently to admit the genial influence of the warm air, and the escape of the mature seeds, without endangering them by exposure to wet. E.) *Petals* dilute scarlet. A strict attention to the proportionate length and breadth of the capsule, and to the hairs on the fruit-stalk being laid close or expanding, will always distinguish this species from the *P. rhæas*.

*Smooth-podded*, or *Long smooth-headed Poppy*. Cornfields, chiefly in light sandy land.

A. June—July.

\* The petals give out a fine colour when infused, and a syrup prepared from the infusion is kept in the shops. It partakes in a small degree of the properties of opium.

Var. 2. *shaggy*. Whole plant very hairy; segments of the leaves snipt.

*Fl. dan.* 902.

This seems to be an intermediate plant between the *P. rhæas* and the *P. dubium*, if it be not a distinct species. The bristles on the fruit-stalks are laid close as in the latter, but the segments of the leaves are very much snipt at the edges. The *calyx* is studded with large transparent globules, with a taper bristle springing out of each. The *capsule* is nearly twice as long as it is broad, so that it is longer than in the *P. rhæas*, but shorter than in the *P. dubium*.

[About Shanklin Chine, and in pastures in various parts of the Isle of Wight.] A. June.

P. Calyx and capsules smooth; leaves embracing the stem, *somniferum*. jagged.

*E. bot.* 2145—*Blackw.* 482  $\beta$  483—*Woodv.* 185—*Dod.* 445. 2—*Lob. obs.* 142. 1. and *ic. i.* 272. 2—*Ger. em.* 369. 1—*Park.* 366. 2—*Fuchs.* 518—*Dod.* 445. 1—*Lob. obs.* 464. 1. and *ic. i.* 274. 1—*Ger. em.* 369. 2  $\beta$ —*Park.* 365. 1—*J. B.* 390—*Matth.* 1058—*Ger.* 296. 1—*Ger.* 296. 2  $\beta$ —*Trag.* 122—*Lob. obs.* 464. 1. and *ic. i.* 274. 2—*Ger. em.* 370.

*Stem, leaves, calyx, and capsule* smooth. *Summits* 10. LINN.

*Petals* white, tinged with purple, with large deep purple blotches at the base. RAY. (The whole plant glaucous. *Stem* three feet high, smooth in the lower part, rough upwards with expanding hairs. *Capsule* roundish, very smooth. *Fl. Brit. E.*)

*White Poppy*. Uncultivated neglected gardens. RAY. Cornfields. HUDSON. Water beach, and banks of the closes which separate Denny Farm from the Ely road. RELHAN. (Certainly wild on the banks of all the fen ditches, where the soil is sandy, in the parish of Hockwold cum Wilton, Norfolk. Rev. Mr. WHITE, in *Fl. Brit.* Near the Observatory, Oxford; and by Godstow Nunnery. SIBTHORPE. Willington Ballast Hills, Durham. Mr. WINCH, in *Bot. Guide*. About Delaine House, near Coupar, Angus-shire. Miss WATSON, in *E. bot. E.*)

A. June—July.\*

\* Opium is the milky juice of this plant, inspissated by the heat of the sun. The Edinburgh College directs an extract to be prepared from the heads, i. e. the seed-vessels. This extract is supposed to be milder in its effects than the foreign Opium, agreeing with many constitutions by which that cannot be borne, but it requires double the quantity for a dose. A syrup, made with a decoction of the heads, is kept in the shops, under the name of Diacodion. The seeds are sometimes used to make emulsions, but they have nothing of the narcotic virtues of the other parts of the plant. (This plant is cultivated in England for the above named purposes; and also for the sake of the seeds, from which an oil is extracted little inferior to Olive Oil. E.)

cambricum. P. Capsules smooth, oblong; stem many-flowered, smooth; leaves winged, jagged.

*Dill. elth.* 223. 290—*E. bot.* 66—*Park.* 369. 4—*H. ox.* iii. 14. 12—*Pet.* 52. 4.

*Summits* 5 or 6, distinct. *Capsules* oblong, narrower below, with a kind of beak at the end. LINN. *Leaves* winged, nearly smooth; *root-leaves* on very long hairy leaf-stalks; wings 2 or 3 pair, oval-spear-shaped, deeply cut, almost lobed, the terminating one with 3 lobes; *stem-leaves* on short fruit-stalks, the upper sitting. *Fruit-stalks* slightly hairy, with one flower. *Petals* egg-shaped, pale yellow, scored towards the base. WOODWARD.

*Yellow Poppy.* Mountains of Wales, and about Kendal. [By the Ferryhouse on Winandermere, Westmoreland, and near Holker, Lancashire. Mr. WOODWARD.] (Mossdale head in Wensley Dale, Yorkshire. Mr. BRUNTON. On the Breiddin Hills, Montgomeryshire. AIKIN. Craig Cwm Pistill, near Newtown, ditto. Dr. EVANS. About Pont Nedd Vachn, Aberdylais, &c. Glamorganshire, plentiful. DILLWYN. *Bot. Guide.* Near Pont Meredith, Denbighshire. Mr. GRIFFITH. E.)

P. June—Aug.

NYMPHÆA. *Bloss.* many petals: *cal.* 4 or 5 leaves: *summit* round, flat, sitting: *berry* superier, lopped, many-celled.

lute'a.

N. Leaves heart-shaped, very entire: calyx 5-leaved, much larger than the petals.

*Fl. dan.* 603—*Blackw.* 497. *a* and *b*, and 499. 1—*E. bot* 159—*Lonic.* i. 177. 2—*Kniph.* 3—*Fuchs.* 536—*Trag.* 697—*J. B.* iii. 771—*Matth.* 894—*Clus.* ii. 77. 2—*Dod.* 585. 2—*Lob. obs.* 324. 2. and *ic.* i. 594. 2—*Ger. em.* 819. 2—*Park.* 1252. 5—*Pet.* 71. 3—*Ger.* 672. 2.

*Calyx*, leaves roundish. *Petals* very small. LINN. *Leaves* egg-shaped, with a deep notch at the base, (floating on the surface of water, very large and smooth. E.) *Calyx*, leaves yellow, except at the base on the outside, where they are green. *Petals* fleshy, yellow. *Stamens* after shedding their pollen bent back. *Seed-vessel*, cells often more than fifteen, (egg-shaped, in a degree beaked, smooth. E.) *Flowers* on long fruit-stalks.

*Yellow Water Lily*, or *Water-can*. Slow rivers, pools, and ditches. [River Avon, at Pershore, Worcestershire. Mr. BALLARD. Mr. WALDRON HILL.]—(In the river Alt, by Formby, near Liverpool. Mr. SHEPHERD.—Common in the rivers and lakes of Norfolk and Suffolk. Mr. WOODWARD.—Mere, near Scarborough. Mr. TRAVIS. E.)

P. July—Aug.\*

(Var. 2. *Lesser Yellow Water Lily*. *Nymphaea lutea*  $\beta$ . *minima*. WILLD. *Nuphar minima*. E. bot. 2292. It differs from the commoner kind in being much smaller, and especially in its deeply toothed, green bordered stigma, and compressed foot-stalks. Leaves somewhat silky beneath, their lobes rather spreading or divaricated. Discovered by Mr. W. BORRER in the lake on the Highland mountain Ben Cruachan. E. bot. E.)

N. Leaves heart-shaped, very entire; calyx 4-cleft.

al'ba.

*Fl. dan.* 602—*Blackw.* 498. *a and b.* and 499—*E. bot.* 160—*Fuchs.* 535—*Trag.* 696—*J. B.* iii. 770—*Gmel.* iv. 71—*Matth.* 893—*Ger.* 672. 1—*Clus.* ii. 77. 1—*Dod.* 585. 1—*Lob. obs.* 324. 1. and *ic.* i. 595. 1—*Ger. em.* 819. 2—*Park.* 1251. 1—*Pet.* 71. 1.

*Petals* in several rows, resembling a double flower. The flower opens about seven in the morning; closes about four in the afternoon, and then lies down upon the surface of the water. LINN. *Leaf-stalks* and *fruit-stalks* round; within full of pores, four of which are generally larger than the rest; hairs interwoven between. *Calyx*, leaves smaller than the outer petals. REIHAN. *Summits* 17 or 18, placed in a circle, and corresponding with as many cells in the germen. *Stamens* fixed to the side of the germen. Sr. *Leaves* oval, with a deep notch at the base. *Leaflets* nearly central. *Petals* numerous, white. (This most beautiful aquatic is still larger than the preceding, and floats its splendid white, or pinkish flowers, by broad leaves. E.)

*White Water-lily*. *Water-can*. *Can-dock*. In slow rivers and ponds. Marazion Marsh. Mr. STACKHOUSE.—(Frequent in ponds about Liverpool, more so than *N. lutea*. Dr. BOSTOCK.—Common in the rivers and lakes of Norfolk and Suffolk, equally with *N. lutea*. Mr. WOODWARD.—Mere near Scarborough.

\* The roots rubbed with milk destroy crickets and cockroaches. Swine eat it. Goats are not fond of it. Cows, sheep, and horses refuse it. LINN. says observes that the flowers smell like brandy. An infusion of a pound of the fresh root to a gallon of water, taken in the dose of a pint, night and morning, cured a leprous eruption of the arm.



Mr. TRAVIS. E.)—River Sow, near Stafford. In the large pool at Patshull, Staffordshire. P. July.\*

**TIL'IA.** Bloss. 5 petals: *cal.* with 5 divisions: *seed-vessel* leather-like, globular, 5-celled, 5-valved, opening at the base.

Europæ'a. T. Flowers without a nectary; berry 4-celled.

*E. bot.* 610—*Ludw.* 48—*Kniph.* 10—*Sheldr.* 50—*Hunt. evel.* at p. 201. i, p. 194. *ed.* 2d—*Fl. dan.* 553—*Blackw.* 469—*Matth.* 174—*Ger.* 1298. 1—*Dod.* 838—*Lob. obs.* 606. 1. and *ic.* ii. 188. 1—*Ger. em.* 1483. 1—*Park.* 1407. 2—*Lonic.* i. 33. 3—*Fuchs.* 862—*J. B. i. b.* 133—*Trag.* 1110.

*Leaves* heart-shaped, serrated. *Floral-leaf* yellowish green, nearly as long as the fruit-stalks, and attached to it for about half its length. *Blossoms* yellowish white. (*Branches* smooth. *Leaves* alternate, on leaf-stalks, ramifications of the veins underneath hairy. *Calyx* woolly at the edge. *Petals* blunt, concave. *Stamens* thread-shaped. *Stigma* five-cloven. *Fl. Brit. E.*)

*Lime Tree.* *Linden Tree.* Woods and hedges. T. July.

Var. 2. *Leaves* unequally serrated: fruit cottony: cells 5. Du Roi.

*Small-leaved Lime, or Linden Tree.* *Bast.* *Tilia cordata.* MILL. Du Roi. Essex, Sussex, and Lincolnshire. RAY. (We incline to think the *T. parvifolia* of Ehrhart and *E. bot.* 1705—*T. microphylla* of Ventenat, and *T. Europæa*  $\beta$  of Fl. Brit. no other than this variety. Woods about Pont Nedd Vechn, Glamorganshire. Mr. E. FORSTER, jun. Near Lord Leices-

\* It extends itself by long runners which form a root at the end, and send up leaf-stalks in deep water. The root is bulbous. It is one of the most beautiful of the English plants, and may be propagated by transplanting the bulbous roots in winter. Mr. STACKHOUSE. Botanists often affect to despise the labours of the florist, who wishes, by multiplying the petals, to produce double flowers, stigmatizing them by the name of monsters. They may be monsters, but they are often beautiful monsters. Who does not admire the flower of the double blossomed cherry? And when, as in the white Water Lily, the petals are naturally multiplied to a great degree, the botanist who turns away with disdain from this splendid object of creation must be fastidious indeed. The petals gradually lessen as they approach the center of the flower, where the outer filaments expanding in breadth gradually assume the form of petals, as is generally the case in the double flowers of our gardens. The roots are used in Ireland, and in the island of Jura to dye a dark brown. Swine eat it. Goats are not fond of it. Cows and horses refuse it. Both the species support the *Aphis aquatilis* and *Leptura aquatica*.

ter's woods at Denham near Barrow, Suffolk. Sir. T. G. CULLUM. *Bot. Guide*. White Wood near Gamlingay, Cambridgeshire. RELHAN. E.)

Var. 3. Fruit 6-cornered.

Whitstable, Surry, and near Darking. MEER.

Var. 4. Small branches red : leaves with a soft woolliness : fruit 4-cornered. RAY.

*Red Lime Tree*. . Stoken Church Wood. RAY.\*

**CIS'TUS.** *Bloss.* 5 petals: *cal.* 5 leaves; 2 of them smaller: *caps.* from 1 to 10-celled; from 3 to 10-valved.

(1) *Shrub-like; without stipulas.*

C. Stems trailing; leaves hairy, opposite, oblong, flat, marifo'lius. hoary beneath, flowers in bunches,

*E. bot.* 396—*Dill. elth.* 145. 173—*J. B.* ii. 18.

*Stems* numerous. *Flowering branches* ascending, hairy. *Leaves* egg-shaped, blunt, opposite, sitting, green on both sides but covered with white hairs. *Bunches* terminating, with three or four flowers, with small spear-shaped floral-leaves. Mr. WOODWARD. (A little shrub. *Root* and *stems* woody. *Leaves* on leaf-stalks, flat, egg-oblong or spear-shaped, green above, hoary underneath. *Petals* four or five, inversely egg-shaped,

\* It flourishes best on the sides of hills, but it will live very well in meadow grounds. It is easily transplanted, and grass grows beneath it; it is useful to form shady walks and clipped hedges. (Exotic species are successfully engrafted on it. A sort of coarse stuff is prepared and worn by the shepherds of Carniola from the outer bark. E.) The wood is soft, light, and smooth; close grained, and not subject to the worm. It makes good charcoal for gunpowder and for designers. It is used for leather-cutters' boards and for carved work. It is also employed by the turner. The leaves are dried in some countries as winter food for sheep and goats. Cows eat them in the autumn; but they give a bad taste to the milk. The bark, macerated in water, may be made into ropes and fishing nets. The flowers are fragrant, and afford the best honey for bees. The sap inspissated affords a quantity of sugar. It supports the *Sphinx Tiliæ*; *Phalæna lanestris*, *dispar*, *antiqua*, *Psi*, *Bucephala*; *Aphis Tiliæ*; *Acarus telarius*. (Missa, the French physician, pounding the fruit of Lime trees, obtained a batyraceous substance much resembling chocolate. This experiment was repeated by Marcgraff with equal success, and probably some of the American species may yield a produce more completely similar. VENTENAT Dr Swediaur recommends an infusion or water prepared from the fragrant blossoms of the Lime tree as an antispasmodic. E.)

very entire. *Flowers* yellow, small. *Calyx* hairy. *Style* knee-jointed. *Fl. Brit.* *Leaves* sometimes nearly spear-shaped, and more or less hairy, but always white and hoary underneath. LINN. E.)

*Hoary Dwarf Cistus.* *C. marifolius.* LINN. Sp. pl. Fl. Brit. *C. hirsutus.* HUDS. *C. anglicus.* LINN. MANT. Bot. Arr. ed. 3. Mountainous pastures and rocks. On the west side of Betham Bank, a mile from Kendal; Buckbarrowbank-scar, between Bridgsteer and Conswick, and about Cartmell Wells, Lancashire. RAY. Gloddaeth, Caernarvonshire. PENNANT. West foot of Bwrdd Arthur, Anglesea. Mr. DAVIES, in Penn. Wales, ii. 255. [On Humphrey Head, in Cartmel. Mr. JACKSON.] P. May.

(2) *Herbaceous; without stipulas.*

*guttatus.* *C.* Leaves opposite, spear-shaped, 3-fibred; bunches without floral leaves.

*Dicks. h. s.-Ger. em.* 1281. 19-Park. 661-J. B. ii. a. 14. 1.

Whole *plant* with expanding hairs. *Stem* upright. *Leaves* sitting, opposite, three or four pairs. *Bunch* slender, often without floral-leaves. *Flowers* upright, but when just out of blossom pendent. *Fruit* upright. *Petals* with a black spot at the base. *Calyx*, two of the leaves open. LINN. *Stem* and *leaves* hairy. *Bunches* terminating. *Fruit-stalks* long, slender, without floral-leaves. Mr. WOODWARD. *Flowers* pale yellow. (*Petals* with a dark reddish spot at the base. *Stem* about a foot high. E.)

*Spotted-flowered Cistus.* Sandy pastures on M. Llech ddue, near Holyhead, Anglesea. In the Island of Jersey. MILLER, (and Isle of Man. Mr. BREWER. HUDSON. E.) A. June.

(3) *Herbaceous; with stipulas.*

*ledifolius.* (*C.* Pubescent; leaves spear-shaped; fruit-stalks upright, shorter than the calyx; flowers solitary. E.)

*Clus. i.* 76. 2-Lob. obs. 552. 1; and *ic. ii.* 118. 1-Ger. em. 1280. 17-Park. 661. 7.

*Calyx* longer than the blossom. (*Capsule* as long as the calyx, one celled. LINN. E.) *Petals* yellow, smaller than the calyx, very soon shedding sometimes wanting. HUDSON. (*Stem* nearly upright, undivided, sometimes branched at the bottom, cylindrical, hairy, leafy, few-flowered. *Leaves* opposite, blunt,

very entire, narrowed at the base, downy on both sides. *Stipulas* one third the length of the leaves, acute. *Calyx-leaflets* tapering to a point, marked with nerves, hairy. *C. salicifolius*, with which this plant has been confounded, differs in being only one half the size; in having a more branched stem, horizontal peduncles, and calyx half as long again. *Fl. Brit. E.*)

*Ledum-leaved Cistus. C. salicifolius.* HUDS. WITH. Ed. 3 and 4. Sandy meadows and pastures. Near Brean, or Brent Downs, Somersetshire. HUDSON. A. June—July.

(4) *Somewhat shrub-like; with stipulas.*

C. Trailing; stipulas spear-shaped; leaves oblong, edges rolled back, somewhat hairy (above, hoary underneath. E.) *Helianthemum.*

*Curt.-E. bot.* 1321—*Kniph.* 12—*Fl. dan.* 101—*Walc.* 5—*Park.* 656. 1—*Clus.* 1. 73. 1—*Lob. ic.* ii. 117. 1—*Ger. em.* 1283. 4—*J. B.* ii. 15. 2—*Lob. ic.* ii. 117. 2—*Ger. em.* 1282. 3—*J. B.* ii. 16. 1—*Ger.* 1100. 3 and 2—*Matth.* 744—*Trag.* 221.

*Petal:* nearly circular, very entire, deep yellow, with generally a tawny ring surrounding the receptacle. *Bunch* before flowering nodding. *Leaves* sprinkled with scattered hairs. LINN. *Stems* thread-shaped, a little woolly. *Leaves* egg-spear-shaped, in pairs at each knot of the stem, above green and somewhat hairy, cottony underneath. *Leaf-scales* four at each knot of the stem. *Calyx*, the three larger leaves composed of strong green ribs, connected by a semi-transparent dotted membrane; the two outer spear-shaped, green, and which are more like floral-leaves. *Petals* yellow, a little toothed on the outer part. (Dr. Smith says lasting but a day, scattering early in the afternoon. E.) *Flowers* very rarely white. RAY. *Stamens* yellow. *Germs* silky, white. *Style* club-shaped, green. *Capsule*, cell one, valves three. (The *stamens* exhibiting a curious instance of irritability. When touched with a pin or bristle they retire from the style, and lie down in a spreading form on the petals. This can be seen only in calm warm weather, and when the flowers have not been ruffled by insects. Dr. HOPE, in *E. bot. E.*)

*Dwarf Cistus. Little Sun-flower.* Mountainous meadows and pastures, especially in a calcareous soil. (Lackhampton hill near Cheltenham. Rev. S. DICKENSON. E.) {On Salisbury Craigs, near Edinburgh. Lime rocks near Bristol. On the whole range of high and dry chalky lands with a flinty sur-



face, extending from Salisbury Plain to the North of Gloucestershire.]

P. June—Aug.

Var. 2. Blossoms white. Gogmagog Hills, (Wood-Ditton, Cambridgeshire. RELHAN. E.)

Var. 3. Blossoms rose-coloured.

Var. 4. *surrejanus*. HUDS. *C. surrejanus*, which see.

I am inclined to consider it, with Mr. Hudson, as a variety of *C. Helianthemum*, there being so great a resemblance, and the material difference being only the shape of the petals, and that of the calyx, though the last differs but very little. WOODWARD.

(Another plant more nearly resembling *C. helianthemum* than any other species is represented in *E. bot.* 2208, and said to be the real *C. tomentosus* of Scopoli. Dr. Smith observes that the leaves, flower-stalks, and calyx are much more hoary and downy than in *C. helianthemum*, but that cultivation impairs this; and admits that a decisive specific character is still wanting. The plant was communicated by Mr. G. Don from Scotland, where it was also gathered by Mr. Dickson. E.)

*surreja'nus*. *C.* Trailing; leaves egg-oblong, somewhat hairy beneath, dotted; petals spear-shaped.

*E. bot.* 2207—*Dill. elth.* 145. 174.

Differs from the preceding in the *petals* being more pointed, narrower and reflected, and the leaves being more hairy, (larger, more spear-shaped than elliptical, paler but not hoary beneath. *Stamens* scarcely longer than the germen, not equal to the petals in *C. helianthemum*. E.) Blossom yellow.

Narrow-petaled *Cistus*. Dotted-leaved *Cistus*. *C. Helianthemum*.  $\delta$ . HUDS. Near Croydon, Surrey. Du Bois in R. Syn. (Not found there latterly. *Bot. Guiae*. E.) S. July.

*polifo'lius*. *C.* Trailing; leaves oblong-egg-shaped, hoary; calyx even; petals serrated.

*E. bot.* 1322—*Dill. elth.* 146. 172—*Pluk.* 23. 6.

Flowers white. LINN. Stems numerous. Flowering branches ascending, cottony, white. Leaves opposite, rolled back at the edge, with a prominent mid-rib underneath, cottony, white. Bunches terminating. Fruit-stalks short. Leaf-scales spear-shaped. Calyx purplish, slightly hairy; the two outer leaves spear-shaped, minute. WOODWARD.

*White Mountain Cistus.* Brent Downs, Somersetshire, near the Severn Sea. (Also found by the Rev. AARON NECK at Babbicombe near Newton Abbot, Devonshire. *E. bot.* Plentiful on the rocks above Tor-quay. Rev. Dr. BEEKE. *Bot. Guide.* E.) P. July.

## DIGYNIA.

(PŒO'NIA. *Cal.* 5 leaves: *petals* 5: *styles* none: *follicles* superior: *seeds* many.

P. Leaves twice ternate; leaflets egg-shaped, undivided, coral'ina. smooth; seed-vessels downy, recurved.

*E. bot.* 1513—*Mill. ill.* t. 47.

*Stems* about two feet high, annual, simple, leafy, round, smooth, more or less red. *Leaves* twice ternate, smooth; the uppermost often ternate at the extremity only, with a pair of simple leaflets below. *Leaflets* sharp-pointed, entire. *Flower* terminal, solitary. *Calyx* of five concave irregular leaves. *Petals* five, crimson, regular, roundish. *Stamens* red, with yellow *anthers*. *Germens* mostly three or four egg-shaped, white, downy, with recurved, crimson *stigmas*. *Seeds* black, shining, intermixed with crimson, abortive ones.

*Pæony.* We cannot hesitate to adopt from the English Botany this very splendid addition to the British Flora, it having been found growing undoubtedly wild, and in great profusion, in the rocky clefts of the island called Steep Holmes in the broad part of the river Severn, by FRANCIS BOWCHER WRIGHT, Esq. in August 1803. It is conjectured to have grown there for ages, as two fishermen testify having gathered its flowers sixty or seventy years ago. P. May—June. E.)

POTE'RIMUM. *Stamens* and *pistils* in different flowers, on the same plant: *calyx* 4 leaves: *bloss.* with 4 divisions.

Male. *Stam.* 30 to 40.

Fem. *Drupa* juiceless; beneath; 1 or 2 celled; formed of the indurated tube of the blossom.

*Sanguisorba*, P. Thornless; stems somewhat angular.

*Dicks. h. s.*—*E. bot.* 860.—*Ludw.* 197—*Kniph.* 1—*Curt.—Matth.* 1034—*Dod.* 105. 1—*Lob. obs.* 412. 3; and *ic.* i. 718. 2. 1—*Ger. em.* 1045. 1—*Park.* 582. 1—*Ger.* 889. 1—*Sheldr.—Gars.* 457—*Fuchs.* 729—*J. B.* iii. b. 116—*Blackw.* 413—*Col. ecphr.* i. 124—*H. ox.* viii. 18. 1.

(Stems branched, leafy, angular, many-flowered, smooth. Leaves unequally winged, leaflets roundish egg-shaped, serrated, smooth, slightly glaucous. Peduncles terminating, elongated, naked. *Fl. Brit. E.*) Barren flower with two feeble pistils. Berry dry, angular. Seeds four-cornered, tapering to each end. LINN. Female flowers at the top of the spike. Flowers greenish, sometimes purplish on the outside. The plant has the habit of the *Sanguisorba officinalis*, and its fruit also bears a near resemblance, but the number and disposition of the stamens, &c. will readily distinguish them.

Common Burnet. In a dry calcareous soil. [Brathay meadows, near Ambleside, and elsewhere in Furness Fells. Mr. ATKINSON. Weaver Hills, Staffordshire. Mr. PITT. St. Vincent's Rocks, near Bristol. Salisbury Plain.]

P. April—May.\*

## TRIGYNIA.

**DELPHINIUM.** *Calyx* none: *petals* 5 or 6: *nectary* cloven, horn-shaped behind: *caps.* leguminous, many-seeded.

*consolida.* D. Capsule single; nectary of 1 leaf; stem subdivided.

\* The leaves and seeds are mildly astringent, and have been used in dysenteries and hæmorrhages. LEWIS. The young leaves are sometimes used in sallads, and in cool tankards. When bruised they smell like cucumber. It has, of late years, been cultivated, as affording food for cattle early in the spring; and growing so luxuriantly, as to allow of three mowings during the summer. *Bot. arr. ed.* i. p. 78:—but not answering the farmers' expectations, it is now in a great degree laid aside. Cattle are said not to be fond of it, nor is its produce sufficient to answer the expence attending its culture. CURTIS. On Salisbury Plain, between Salisbury and Everley, this plant forms almost the whole staple of the herbage over a great extent of that most excellent sheep-walk. It is kept sheared very close by the large flocks which depasture on it every day, except here and there a flower stem which is left growing. I have no doubt but it is a most valuable plant in hard stocked sheep-pastures.—Cows prefer it to clover, but sheep and horses do not. MR. PITT. As it only appears in a calcareous soil, the failure in its cultivation may have arisen from want of attention to that circumstance, and cattle may dislike it when fully grown, though when close bitten it prove so valuable to sheep.



*Fumaria intermedia.*









*Fumaria capreolata.*

*Riv. pent.* 124, *Delphinium-Kniph.* 2-*E. bot.* 1839-Ludw. 54-Blackw. 26-*Fl. dan.* 683-Lonic. i. 182. 2-Fuchs. 27-*Trag.* 569-J. B. ii. a. 210-Dod. 252. 2-Lob. obs. 427. 1, and *ic.* i. 739. 2-Ger. em. 1083. 5-Ger. 923, 4-Park. par. 279. 3-Dod. 252. 1-Lob. obs. 426. 2, and *ic.* i. 739. 1-Ger. em. 1082. 1.

*Branches* round. *Leaves* divided down to the base into three or five parts, which are deeply cut into slender strap-shaped segments often forked at the end. *Floral-leaves* two, strap-shaped, opposite. *Petals* irregularly scalloped at the edge; the lateral ones broadest; the uppermost spear-shaped, not blunter than the rest, rather shorter than the nectary, but projecting backwards into a conical tube. *Nectary* placed within the upper petal, tube projecting backwards and inclosed within the tube of that petal, the upper side thin and skinny, the under green and fleshy. *Anthers* double, yellow. *Germs* conical, woolly. *Styles* none. *Summits* two, white, small, fleshy, flattened, and lying close together. *Flowers* blue; by cultivation white, purple, red, or bay.

*Wild Lark-spur.* *Larks-heel.* Corn fields. Swaffham Field. RAY. Lower Road between Cambridge and Gogmagog Hills. RELHAN.—with all the varieties of colour. Mr. WOODWARD. Hinton, Trumpington, Feversham, Cambridge-shire. RELHAN. (Near Bury. Rev. Dr. GOODENOUGH. Corn field near Ripton, rare. Mr. BRUNTON. In a field by Pershore. MERRETT. Fields about Aldborough, at the Hall Farm. Rev. G. CRABBE. About Feltwell, near Brandon. Mr. F. SMITH; and at Barton Bendish, and Oxburgh, Norfolk. Rev. R. FORBY. Hebburn Ballast Hills, Durham. Mr. WINCH. *Bot. Guide.* In several fields near Blandford. PULTENEY. Corn fields at St. Leonard's Farm, near Bedford. ABBOT. E.) A. June—Sept.\*

## PENTAGYNIA:

**AQUILE'GIA.** *Calyx* none: *petals* 5: *nectaries* 5, horn-shaped, alternating with the petals: *caps.* 5, distinct.

\* The expressed juice of the petals, with the addition of a little alum makes a good blue ink. The seeds are acrid and poisonous. When cultivated the blossoms often become double. Sheep and goats eat it. Horses are not fond of it. Cows and swine refuse it. *Phalana Delphinium* lives upon it. LINN.



- vulga'ris. A. Nectaries bowed inwards, nearly equal to the petals; leaflets all on leaf-stalks, lobes distant, roundish, bluntish.

*Kniph.* 5—*Ludw.* 181—*E. bot.* 297—*Fl. dan.* 695—*Mill. ill.* *Dod.* 181. 1—*Lob. obs.* 440. 2, and *ic.* i. 761. 1—*Ger. em.* 1093. 1—*H. ox.* xii. 1. row 3. 1—*Fuchs.* 102—*Trag.* 137—*J. B.* iii. 484. 1—*Park.* 1367. 1—*Matth.* 629—*Swert.* ii. 8. 9—*Lonic.* i. 85. 1—*Column. phyt.* 1—*Ger.* 935. 1.

*Stem* upright, three feet high, branched, somewhat angular. *Leaves*, the lower on leaf-stalks, doubly three-fold; leaflets roundish, with three lobes, cut-scolloped; the uppermost leaves finger-like, lobes oval, very entire. *Leaf-stalks* from the root very long. *Blossoms* blue, or purple. *Seeds* black. *Flowers* pendent. **LYONS.** Sometimes of a yellow green.

(Hudson's *A. alpina*, said to grow in the mountainous woods of Westmoreland, is a lesser variety, with the nectary extended, and but little curved inwards; and according to Dr. Smith, wholly distinct from the *A. alpina* of Linnæus. E.)

*Columbine.* Woods and thickets. [Upper part of Gilling Trough, near Coniston; Kilnsay, Yorkshire. **CURTIS.** Bedingham, Norfolk, with blossoms blue or white; near Swaffham, with blossoms the same, or pale red. Mr. **WOODWARD.** Near Goldsithney, Cornwall. Mr. **WATT.** Souston's Roch, near Shelsley, Worcestershire. Mr. **BALLARD.** About Fal-mouth. Side of a common near which the *Ligusticum cornubiense* grows, one mile and a half from Bodmin. St. Vincent's Rocks, Bristol.]

P. June.\*

## HEXAGYNIA.

**STRATIO'TES.** *Sheath* 2 leaves: *cup* 3-cleft, or 3 leaves: *petals* 3: *berry* 6-celled; 6-cornered: beneath.

- Aloi'des. S. Leaves triangular-sword-shaped; edge fringed with prickles.

*E. bot.* 379—*Fl. dan.* 337—*Mill. ill.*—*Bergen de Aloide.* at p. 1—*Dod.* 589. 1—*Lob. obs.* 204. 1, and *ic.* i. 375. 2—*Ger. em.* 825—*Ger.* 677—*Park.* 1249. 1—*J. B.* iii. 787. 1—*Pet.* 71. 5.

\* The beauty of its blossoms has long introduced it into our flower borders. Goats eat it. Sheep are not fond of it. Cows, horses, and swine refuse it.

(*Root* fibrous. *Leaves* crowded together, acutely keeled, vascular, brittle, blackish green. *Peduncles* shorter than the leaves, upright, one flowered. *Fl. Brit. E.*) *Stamens* and *Pistils* generally in the same flower, but they have been sometimes observed to be on different plants; and where they are found in the same flower, the anthers are barren. LINN. *Leaves* strap-shaped, pointed, gristly; serratures prickly. *Stalk* two-edged, one-flowered. *Sheath* as long as the fruit-stalk; sheath-leaves two, concave, pointed. *Calyx* leaves three, white, egg-shaped, blunt. *Petals* egg-shaped, white. LYONS.

*Water Aloe. Fresh-water Soldier.* Slow streams, and fen ditches. In Norfolk and Suffolk, very frequent. Mr. WOODWARD. (Also in the marshy parts of Lincolnshire, and Cambridgeshire. E.) In pools about four miles from Holmes Chapel, Cheshire. Mr. HUNTER. In the Gyme near Thorn, Yorkshire. Mr. ROBSON. (Near Beverley. Col. MACHELL. Lowndham Hall Mere, Suffolk. CRABBE. At Bradwell and elsewhere about Yarmouth; on Haddisco Dam, close by the turnpike gate. Mr. WIGG. In vast abundance on Hoveton Common, Norfolk. Mr. DAWSON TURNER. Near the New Bridge at Gainsborough. Sir T. G. CULLUM. *Bot. Guide. E.*)

P. June—July.\*

## POLYGYNIA.

**ZOSTE'RA.** *Spike-stalk* strap-shaped, concealed within a grass-like leaf, bearing the fructifications on one side: *cal.* none: *bloss.* none: *stam.* alternate: *caps.* alternate: *seeds* solitary.

**Z.** Seed-vessels sitting.

marina.

\* In the autumn the plants sink to the bottom of the water, and in the spring from amongst the leaves of the old plants arise numerous thick suckers, each bearing a young plant, which floats on the surface, where it grows to maturity. Sometimes eight or ten form a circle on the surface, to which the strings are radii, and the old plant at the bottom the centre, and in this manner they frequently rise so thick as entirely to fill up ditches; to the exclusion of all other plants. I should suppose the mother plant decays, as the floating plants shoot out fibres, which, if they do not sooner, on sinking probably lay hold of the mud, and these I apprehend, produce the fresh offspring. If such be its mode of growth, it is an example of a biennial of a very singular nature. WOODWARD. A great variety of insects are nourished by this plant; some of them pursue it down to the bottom of the water, and devour the leaves. Swine eat it. Goats refuse it.

## POLYANDRIA. POLYGYNIA. Arum.

*E. bot.* 467—*Fl. dan.* 15.

*Stems* much branched. *Leaves* floating, long, grass-like, blunt, from leaf-scales. *Leaf-scales* sheathing, pointed. *Flowers* in a cavity, three or four inches long, on one side of the leaf near the base, which is at first covered with a thin transparent skin. WOODWARD.

*Sea Grass-wrack.* On the sea shores, almost every where. [Salt water ditches, Yarmouth. Mr. WOODWARD.]

P. June—Aug.\*

ocea'nica. *Z.* Seed-vessels on pedicles, olive-shaped.

*Lob. obs.* 471. 2, and *ic.* ii. 248. 2—*Ger. em.* 1569. 8—*Park.* 1292. 1—*J. B.* iii. 794.

Differs also from *Z. marina*, in the roots being matted into a ball. LINN. It varies much both in the length and breadth of the leaves.

Shores of the Isle of Mersey. Portsea Island at Gatham Haven. RAY. (Dr. Smith suspects that the real *Z. oceanica* of Linnaeus is never found on our shores. E.) P. June—Aug.

ARUM. *Sheath* 1 leaf, cone-shaped: *fruit-stalk* naked above, bearing germens at its base, and stamens in the middle.

macula'tum. *A.* Stemless; leaves halberd-shaped, very entire; spike-stalk club-shaped.

*Curt.* 114—*E. bot.* 1298—*Riv. mon.* 124. 1, *Arum*.—*Mill. ill.*—*Blackw.* 228—*Fl. dan.* 505—*Woodv.* 25—*Bulliard-Fuchs.* 69—*J. B.* ii. 784—*Dod* 329. 2—*Lob. obs.* 325. 2, and *ic.* i. 597. 2—*Ger. em.* 834. 1—*H. ox.* xiii. 5. row 3. 1—*Lonic.* i. 200. 1—*Trag.* 774—*Matth.* 596—*Park.* 373. 1. 2.

*Spike-stalk*, the upper part purple, sometimes buff coloured, and sometimes mottled with buff and purple. *Germens*

\* Thrown on the shore by the tide, in great plenty, and mounds or walls are built with it to oppose the encroachment of the sea. Exposure to the weather bleaches it white. Buildings are thatched with the green leaves, which will endure upwards of a century. It is used by the inhabitants of Gothland, in Sweden, as a manure, and also for stuffing beds, in preference to hay, as being softer.—Horses and swine eat it. Cows are not fond of it.

greenish yellow, the upper terminating in a hair-like or awl-shaped style or summit, purple at the end. *Anthems* with two open cells. *Nectaries*, the row above the stamens exactly similar to the upper germens. *Leaves* generally spotted with black spots, and sometimes with white streaks. *Sheath* conical; pale green. *Berries* red, growing in a naked cluster.

*Wake Robin. Cuckowpint.* Shady places, ditch banks and rough grounds. [Plentiful in the dingle in Edgbaston Park, near Birmingham.] P. May.\*

**ANEMONE.** *Cal.* generally none : *petals* 5 to 10 : *capsules* many, with awns or tails formed by the style.

(1) *Fruit-stalks with an involucreum ; seeds with tails.*

A. Leaves doubly winged; petals straight.

Pulsatilla.

*Ludw.* 119-*E. bot.* 51-*Fl. dan.* 153-*Relh. at. p.* 208-*Matth.* 620-*Clus. i.* 246. 1-*Dod.* 433. 1-*Lob. obs.* 149. 2, and *ic.* i. 281. 2-*Ger. em.* 385. 1-*Park.* 341. 2-*Kniph.* 1-*H. or.* iv. 26. row 1. 1-*Pet.* 40. 9-*Ger.* 308. 1 and 2, and 309-*Lonic. i.* 83. 2-*J. B.* iii. 409. 2 and 3.

*Stem* downy, with one flower. *Flower* at first covered by the involucreum, afterwards nodding, on a long fruit-stalk. *Involucreum* many-cleft, downy. *Petals* downy without, within smooth, of a deep purple. *Seeds* crowned with the hairy lengthened styles. **WOODWARD.** *Petals* six, violet coloured, (spear-shaped. All the *leaves* from the root hairy. *Root* rather woody. *Stem* six or eight inches high. In reducing the A.

\* The berries ripen about the close of summer. **CURTIS.**—The root and the leaves when recent, are so extremely acrid, that it is highly disagreeable to taste them. The root has been employed in medicine as a stimulant, but when reduced to powder it loses much of its acrimony, and there is reason to suppose that the compound powder which takes its name from that plant, owes its virtues chiefly to the other ingredients. There is no doubt but this acrid quality may be turned to very useful purposes, but we must first learn to ascertain its dose.—The root, dried and powdered, is used by the French to wash the skin, and is sold at a high price, under the name of Cypress Powder. It is undoubtedly a good, and an innocent cosmetic.—After the acrimony of the roots shall have been extracted, either by boiling or baking, they certainly will afford a very mild and wholesome nourishment. Many nations prepare the only bread they have, from plants as acrimonious as this : first dissipating the noxious qualities by the force of heat.—Starch may be made from the roots. (Dr. SWEDIAUR recommends the powdered root in dyspepsia, head-achs and Intermittent Fevers, in doses of gr. x. xx. or xxx. E.)



*pratensis* of Dr. Sibthorpe, to this species, we submit to the authority of Dr. Williams, professor of Botany at Oxford, and follow the example of Dr. Smith, Mr. Relhan, &c. Indeed the difference in the size of the flower, and the petals being bent back instead of straight, are perhaps scarcely sufficient to constitute even a permanent variety. E.)

*Pasque Flower. A. pratensis.* SIBTH.—WITH. Ed. 4. but not of LINN. High pastures, Gogmagog Hills, Hildersshaw, Bartlow, Cambridgeshire. Berhack Heath, near Stainford; Leadstone Hall, above a lake in a place called the Close, near Pontefract; Cornbury Park, near Charlbury, Oxfordshire. [Tulip Hills, near Lexham, Norfolk. Mr. PITCHFORD. Canham Heath, near Bury; and Devil's Ditch, Newmarket. Mr. WOODWARD. Above Sir J. Paul's, Rodborough, Gloucestershire, common. Mr. BAKER.] P. April—May.\*

(2) *Flowers naked; seeds without tails.*

*nemorosa.* A. Seeds pointed; leaflets snipt; stem with 1 flower.

*E. bot.* 355—*Curt.—Kniph.* 1—*Fl. dan.* 549—*Fuchs.* 161—*J. B.* iii. 412. 2—*Lonic.* i. 163. 4—*Trag.* 95. 1. 1—*Ger.* 306. 2—*Walc.—Clus.* i. 247. 1—*Dod.* 435. 2—*Lob. obs.* 384. 2 and *ic.* i. 673. 2—*Ger. em.* 383. 2—*Park.* 325. 1—*H. ox.* iv. 28. 10—*Pet.* 40. 9—*Ger.* 307. 3 and 4.

*Petals* three inner and three outer. LINN. *Plant* smooth, excepting the leaves. *Stem-leaves* doubly three-fold; *leaflets* egg-spear-shaped, variously jagged or lobed; veins slightly hairy. *Petals*, the outer tinged with purple at the base. Mr. WOODWARD. *Stem* and *fruit-stalk* purplish. *Petals*, the outer row with the deepest tinge of purple underneath. The flowers are sometimes double, and sometimes entirely of a purplish red colour. (*Root* tuberous, horizontal. E.)

*Wood Anemone.* Woods, hedges, and hollow-ways, common. P. April.†

\* The whole plant is acrid, and blisters the skin. The juice of the petals stains paper green.—Goats and sheep eat it. Horses, cows, and swine refuse it. (Corrosive and rubefacient. The inspissated juice recommended in amaurosis and paralysis, externally for ulcers, herpetic eruptions, &c. SWEDIAUR. E.)

† The flowers fold up in a curious manner against rain. The whole plant is acrid. When sheep that are unaccustomed to it eat it, it brings on a bloody flux. Goats and sheep eat it. Horses, cows, and swine refuse it. LINN.—(The recent flowers are poisonous, and the plant yields an acrid, volatile principle so corrosive as to be used externally instead of Cantharides. It is also serviceable in head-aches, tertian agues, and rheumatic gout. SWEDIAUR. E.)

A. Seeds pointed; leaflets snipt; petals roundish; stem ranunculoides. mostly 2-flowered.

*E. bot.* 1484-Fuchs. 162-Trag. 95. 2-Lonic. i. 163. 5-Kniph. 1-Ger. 306. 1-Fl. dan. 140-Lob. ic. i. 674. 1-Ger. em. 383. 1-Park. 325. 5.

Differs from *A. nemorosa* as follows: *Petals* yellow, two alternately on the outside, two alternately within, and one without that which is next to it, and one within that which is next to it. *Fruit-stalk* with two leaflets, the latter of which is at the base. LINN. (*Leaves* few. *Involucrum* nearly sitting, leaflets spear-shaped, cut. *Petals* five, not six. *Fl. Brit. E.*)

Var. 2. *Stem* zig-zag at the bottom, supporting only one flower; *Fruit-stalk* naked; *Blossom* with only five petals.

The fig. of Fuchsius and Fl. dan. represent this variety.

*Yellow Wood Anemone.* Shady places and hedges. Near King's Langley, Herts, and Wrotham, Kent. P. May.

A. Seeds pointed; leaflets snipt; petals spear-shaped, apennina. numerous.

*Curt.-E. bot.* 1062.-Clus. i. 254. 2-Dod. 434. 2.

*Petals* blue; sometimes elliptical. WOODWARD. (*Petals* twelve to sixteen, spear-shaped, rather blunt. E.)

*Blue Mountain Anemone.* Woods and shady places. Wimbeton Wood, near Harrow on the Hill; Luton Hoo, Bedfordshire. [Near Berkhamstead, Herts, Mr. GOODALL.] P. April.

**CLEMATIS.** *Cal.* none: *petals* 4, rarely 5 or 6: *styles* permanent: *capsules* many, with tails: *receptacle* a knob.

This plant is sometimes found with yellow dots on the under surface of the leaves, in which state it is figured in Ray 3. 1. at p. 129, and has been mistaken for a Polypodium. Some have supposed these dots the work of an insect, but without sufficient proof. Dr. Pulteney, in Linn. Tr ii. p. 305, has rendered it probable that they are formed of a minute species of Lycopodon, though as they may be discovered in their younger state under the outer cuticle of the leaf, it is not obvious how the seeds could be introduced.

These plants are evidently in a diseased state, of a yellow green, and do not bear flowers. The leaf of the *Betonica officinalis* is liable to be affected in the same manner.

Vital'ba. C. Leaves winged; leaflets heart-shaped, climbing.

*E. bot.* 612—*Curt.* 244—*Jacq. austr.* 308—*Fuchs.* 97—*Trag.* 818—*J. B.* ii. 125. 1—*Lonic.* 1. 210. 1—*Pet.* 40. 12—*Matth.* 957—*Clus.* i. 122. 2—*Dod.* 404. 1—*Lob. obs.* 345. 2, and *ic.* i. 626. 1—*Ger. em.* 886. 1—*Ger.* 739. 1—*Park.* 383. 1—*J. B.* ii. 125. 2—*Pet.* 40. 11.

*Petals* leather-like, spear-shaped. *Leaflets* entire, or tooth-ed. LINN. *Stem* scored. *Leaves* opposite, on leaf-stalks; *leaflets* on leaf-stalks. The *leaf-stalks* twine about any thing they can lay hold of, and thus support the plant. *Fruit-stalks* branched, with triple division, woolly, from the bosom of the leaves. *Petals* green on the outside, cream coloured within, rolled back, scored, woolly. *Styles* becoming very long, slender, crooked, and covered with fine silky hairs.

*Traveller's-joy.* *Virgin's Bower.* Hedges and shady places, in calcareous soil. [Common in the Southern and Western Counties, but I have not observed it north of Worcester-shire.]

S. July—Aug.\*

THALICTRUM. *Cal.* none: *petals* 4 or 5: *cap-sules* many, rather beaked.

alpinum. T. Stem unbranched, almost naked; bunch simple, terminating.

*Fl. dan.* 11—*Lightf.* 13. 1. at p. 266—*E. bot.* 262—*Pet.* 71. 12—*H. ox.* ix. 20. 14—*Boerh. ind. alt.* at p. 44.

A delicate little plant, scarcely a span high. *Petals* four. *Stamens* twelve. *Pistils* eight. *Flowers* on crooked fruit-stalks. *Blossoms* brown. LINN. *Root-leaves* compound, on long leaf-stalks. *Stem* leafless, or in very luxuriant specimens with one nearly sitting leaf. The number of *Stamens* and *Pistils* variable.

*Mountain Rue-weed.* Moist rocks and on the sides of alpine rivulets in Scotland and Wales. [On Ben Lomond. Dr. HOPE. On Malghyrdy, Ben Teskerny, and Craig Cailleach. Mr. BROWN. Cronkley Fell, Durham. Mr. ROBSON.]

P. June.

\* (Astringent, corrosive and diuretic. An infusion has been recommended in dropsy. SWEDIAUR. E.)

**T.** Stem furrowed, leafy; leaflets acute, 3-cleft; panicle *flavum*.  
 cle much branched, upright, compact; flowers upright.

*E. bot.* 367—*Kniph.* 5—*Fl. dan.* 939—*Morris. umb.* 12. 2—*H. ox.* ix. 20. row 2. 1—*Lob. obs.* 508. 3, and *ic.* ii. 56.  
 1—*Park.* 264. 1—*Pet.* 71. 9—*Ger.* 1067. 1—*J. B.* iii. 486.

Root a full yellow. *Petals* four. *Stamens* twenty-four.  
*Pistils* ten to sixteen. LINN. (*Stems* three feet high, upright,  
 angular and furrowed, little branched, paniced at the head.  
*Flowers* upright, yellowish white. *Summits* heart-shaped,  
 short. *Fl. Brit. E.*)

Var. 2. Lobes of the leaves narrower, and more wrinkled.  
 LIGHTFOOT.

*H. ox.* ix. 20. 3.

*Leaflets* the lower irregular, sometimes wedge-shaped, with  
 three clefts; sometimes oval, entire, with a sort of lobe on  
 one side; the upper spear-shaped, entire, or with three clefts.  
*Flowers* numerous, close and thick. WOODWARD; yellowish  
 white.

*Meadow Rue-weed.* Moist meadows, pastures, and banks  
 of rivers. P. June.\*

**T.** Leaves triply winged; leaflets 3-cleft; panicle large, *minus*;  
 expanding; flowers on crooked fruit-stalks.

*Jacq. austr.* 419—*Fl. dan.* 732—*Kniph.* 5—*E. bot.* 11—*Dod.* 58.  
 2—*Lob. obs.* 508. 2, and *ic.* ii. 56. 2—*Ger. em.* 1251. 2—  
*Park.* 264. 5—*H. ox.* ix. 20. 12—*Pet.* 71. 10—*Ger.* 1067.  
 2—*J. B.* iii. 487. 3—*Pet.* 71. 11.

Distinguishable by the purplish points of the leaves, and  
 bluish bloom on the stem. LINN. *Leaflets* broad and blunt;  
 the number of clefts variable. *Panicle* branched, *flowers* few,  
 scattered, at first nodding, afterwards upright. WOODWARD.  
 (*Stem* nearly upright, about a foot high, crooked, furrowed,  
 leafy, paniced. *Lower-leaves* very large, spreading. *Petals*  
 four, elliptic, glaucous-purple. *Seeds* grooved. *Fl. Brit. E.*)

*Lesser Rue-weed.* Moist mountainous meadows in a cal-  
 careous soil. About Newmarket. Linton, and borders of

\* A cataplasm, made of the leaves, has been known to give relief in  
 the Sciatica. The root dyes wool yellow. Cows, horses, goats and sheep  
 eat it. Swine are not fond of it. LINN.



Gogmagog Hills, Cambridgeshire, and mountains in Malham and Settle, Yorkshire. RAY.—[Chedder Cliffs, Somersetshire. Dr. FORD.—In the North, and in Caernarvonshire. HUDSON.—Gloddaeth, Caernarvonshire. PENN. *Wales*.—Marham, Norfolk. Mr. CROWE.—Skirreth Wood, near Ingleton, and about Kilnsay, Yorkshire. CURTIS.—Thorpe Arch, Yorkshire. Mr. AIKIN.—Links of Montrose, also between Caroline Park and Cramond, near Edinburgh. Mr. BROWN.] P. July—Aug.

ma'jus.

T. Leaves with many divisions; flowers nodding; flowering branches axillary; 2 or 3 together.

*Jacq. austr.* 420.—*E. bot.* 611.

(Dr. Smith observes that *Dod.* 58. f. 1. and *Ger. em.* 1251. f. 1. rather represent this plant than *T. flavum*. E.)

Grows in meadows, or in stoney places with the *T. minus*, but is distinct from that. It approaches the *T. sibiricum*. It flowers nearly a month sooner than the *T. minus*. Root perennial, throwing up one or two stems every year. Stems crooked, two or three feet high, cylindrical, scored, purplish green, leafy, paniced, Branches always several from the same point, of different lengths. Leaflets small, egg-shaped or roundish, two or three-cleft towards the end; rather glaucous, green above, quite so underneath. Flowers sweet, pendent. Petals four, purplish green. Stamens fifteen to twenty. Anthers yellow. Pistils four to seven. Seeds spear-shaped, furrowed, acute. It may be distinguished from the *T. minus* by its always sending out two or three branches from the same knot on the stem or larger branches, and by the leaflets being dark green above and glaucous underneath; whilst in *T. minus* the branches rise singly and the leaflets are of a lighter green above, and scarcely to be called glaucous underneath. This plant is also much more branched and one third taller. JACQUIN. This species seems first to have been described by Crantz, in his *Stirp. Austr. fasc. ii. p. 108*, who particularly notices its differing from the *T. minus* in its branches growing three together, the darker colour of its leaves, the greyer green of their under surface, and their pellucid veins.

Jacquin observes above that this plant approaches the *T. sibiricum*, but omits to mention the differences, which are sufficiently obvious. In that the fruit is different; the stem is green, not purplish, the leaflets are finely serrated, and very much smaller than even those of the *T. minus*.

In the specimen now before me, which was sent by Mr. Robson of Darlington, the leaves are trebly winged, the leaflets urn-shaped, 3-cleft at the end; the petals 4, purplish; the stamens 14 to 18, the anthers yellow, the pistils from 5 to 7.

*Greater Rue-weed.* [Discovered by Mr. E. ROBSON, about two miles from Darlington, in a dry exposed situation, among bushes at Baydales. He says it frequently attains the height of four or five feet, and that he has since seen specimens which were collected in Cumberland.] (In Holderness. Mr. KNOWLTON.—About Skipton. Rev. W. WOOD.—Hedges near Egleston, Yorkshire, side of the Tees. Mr. BRUNTON.—Gordale. Mr. S. WOODS.—Sides of rivulets about Salisbury. Dr. MATON.—Banks of Ullswater. Mr. J. WOODS, jun.—Hedges leading to Barnard Castle. Mr. WINCH.—In a ravine of the Screes, near Wast water. Mr. WOOD. *Bot. Guide.* E.) P. June—July.

ADO'NIS. *Cal.* 5 leaves: *petals* 5 or more: *nect.* none: *seeds* naked.

A. Flowers with 5 petals; fruit egg-shaped.

*æstiva* 'lis.

*Cam. epit.* 648—*Pet.* 39. 8.

Only one or two flowers on a plant. *Petals* 5 or 6; longer and narrower in the *A. autumnalis*; scarlet. (*Leaves* alternate, sitting, triply-wing-cleft, segments strap-shaped, sharp-pointed. *Stem* upright, branched. E.)

[Corn fields on Salisbury Plain, near the road from Ambresbury to Everly.] (Mr. Dawson Turner has also since received indigenous specimens from Mr. Sowerby, which he says appear very different from *A. autumnalis*. E.) A. May—June.

A. Petals about eight: fruit egg-cylindrical.

*autumnal* 'lis.

*Curt.* 135—*Kniph.* 5—*Clus.* i. 336. 1—*Dod.* 260. 3—*E. bot.* 308—*Lob. obs.* 150, *ic.* i. 283. 2—*Ger. em.* 387—*Ger.* 310. 1—*Park. par.* 291. 5.

The *seeds* in both species are covered with a thick permanent coat, not opening like a capsule, so that having no proper capsule they may be considered as naked. The shape of the *fruit* mentioned in the specific character applies to the whole mass of seeds upon the fruit-stalk. Several *flowers* on a plant. *Fruit* oblong or cylindrical, not egg-shaped as in the preceding. *Petals* seven or eight; dark scarlet, almost black at the base. (*Leaves* triply-wing-cleft, segments strap-shaped. *Stem* upright, branched; scored. E.)

*Adonis Flower. Red Maithes. Autumnal Pheasant's-eye.* Corn fields. In the counties round London. CURTIS.—(About Dublin. Dr. WADE.—Cornfields near the observatory, Oxford. SIBTHORPE.—Matterley farm, Hampshire, also in corn fields

near Blandford; in Stour Paine field, on the borders of the Camp Down. PULTENEY. E.)

A. June—July.\*

**RANUNCULUS.** *Cal.* deciduous, 5 (or 3-leaved :) *petals* 5, (rarely 2, 3 or 8) with a nectariferous scale or pore within the claw: *styles* permanent: *seeds* incrustated, upright.

(1) *Leaves undivided.*

**Ficaria.** *R.* Leaves heart-shaped, angular, on leaf-stalks; stem 1-flowered; flowers with eight petals; calyx with three leaves.

*E. bot.* 584—*Ludw.* 52—*Fl. dan.* 499—*Curt.*—*Blackw.* 51—*Walc.*—*Kniph.* 1—*Fuchs.* 867—*J. B.* iii. 468—*Lonic.* i. 166. 1—*Dod.* 49—*Lob. obs.* 323. 1, and *ic.* i. 593. 2—*Ger. em.* 816—*Park.* 617. 3—*Pet.* 38. 1—*Ger.* 669—*Matth.* 831—*Trag.* 613.

*Root* composed of oblong egg or club-shaped bulbs. *Leaves* smooth, rather shining. *Calyx* leaves 3 or 4. *Petals* 8 or 9; bright yellow. Small egg-shaped germinating bulbs are said sometimes to be found in the bosom of the leaf-stalks. (*Stem* scarcely half a foot high, nearly upright, leafy, smooth. *Flowers* pedunculated, upright, solitary, rich yellow, afterwards becoming white. *E.*)

*Pilewort.* *Lesser Celandine.* *Ficaria verna.* HUDSON. Meadows and pastures, common. P. April.†

**Flam'mula.** *R.* Leaves egg-spear-shaped, on leaf-stalks; stem declining.

*Curt.*—*E. bot.* 387—*Fl. dan.* 575—*Dod.* 432. 1—*Lob. obs.* 382. 2, and *ic.* i. 670. 1—*Ger. em.* 961. 2—*H. ox.* iv. 29. 34—*Walc.* 5—*Park.* 1215. 2—*Ger.* 814. 2.

(*Root* composed of long, simple fibres. *Stems* spreading, branched, leafy, cylindrical, smooth. *Flowers* terminating, solitary, pedunculated, upright, of a rich shining yellow colour. *Calyx* reflexed, nearly smooth. *Nectary* very small. *Fl.*

\* Its beautiful scarlet blossoms have gained it admittance into our gardens.

† The young leaves may be eaten in the spring along with other pot-herbs. Goats and sheep eat it. Cows and horses refuse it. *Curculio dorsalis* is found upon it.

Brit. E.) *Leaf-stalks* long, rather a doubling of the leaves. *Leaves* more or less toothed or serrated. *Flowers* yellow. The plants with leaves serrated are represented in

*Dod.* 432. 2-*Lob. obs.* 382. 3, and *ic.* i. 670. 2-*Ger. em.* 962. 3-*Pet.* 39. 6-*H. ox.* iv. 29. 35-*J. B.* iii. 864. 3-*Ger.* 814. 3-*Park.* 1215. 3.

*Lesser Spear-wort.* Bogs, boggy meadows and sides of rivulets. P. June—Sept.\*

(The *R. reptans* of Linn. With. and other authors, even in the time of Lightfoot, was suspected to be only a variety of this species, in that opinion more recent botanists generally concur. It has been frequently observed in a series of gradations between the two; it is thus described by Mr. Woodward. *Leaves* one to four at each joint, upright. *Stem* slender, creeping. *Flowers* solitary, terminating, or at the joints; small, yellow.

*Dicks. h. s.—Kniph.* 9-*Lightf.* 1. *frontispiece—Fl. dan.* 108-*Amman.* 13. 1-*Fl. Lapp.* 3. 5.

*Narrow-leaved Crow-foot.* *R. flammula* ♂. Fl. Brit. E.) Sides of lakes, rare. West end of Loch Laver. [Stony margin of Conniston Water, Lancashire. Mr. WOODWARD.—In a field between an old intrenchment and the high road near Manchester race ground. Mr. CALEY.—On the margins of Loch Tay. Mr. BROWN.] P. July—Aug.

R. *Leaves* long spear-shaped; stem upright, (many-lin'gua. flowered. E.)

*E. bot.* 100-*Fl. dan.* 755-*Ger.* 814. 1-*Ger. em.* 961. 1-*Park.* 1215. 1-*H. ox.* iv. 29. 33-*Pet.* 39. 5-*J. B.* iii. 865.

*Leaf-stalks* short. Mr. WOODWARD. A much larger plant than the *R. Flammula*. *Leaves* in length equal to many times

\* It is very acrid. Applied externally it inflames and blisters the skin. Horses eat it. Cows, sheep, goats and swine refuse it. Its acrimony rises in distillation. Some years ago a man travelled in several parts of England administering vomits, which, like white vitriol, operated the instant they were swallowed. The distilled water of this plant was his medicine; and, from the experience I have had of it, I feel myself authorised to assert, that in the case of poison being swallowed, or other circumstances occurring in which it is desirable to make a patient vomit instantaneously, it is preferable to any other medicine yet known, and does not excite those painful contractions in the upper part of the stomach which the white vitriol sometimes does, thereby defeating the intention for which it was given.



their breadth, ending in a long tapering point, but in *R. flammula* they are in length only 3 or 4 times their breadth, and do not end in a long taper point. They are sometimes toothed at the edge. Blossom large, deep yellow. (Stem 3 or 4 feet high. Leaves tapering to a sharp point, not inclining to blunt ends. Calyx hairy. E.)

*Great Spearwort, or Crowfoot.* Wet pastures and sides of lakes. Bogs on Iwer Heath, near Uxbridge. Between Rotherhithe and Deptford. [Bogs on Malvern Chase, Worcestershire. Mr. BALLARD.—Kineson Pool, near Stafford. Sr.—Ditches about Restennet, Angus-shire. Mr. BROWN.—Sides of Ancott Pool, Salop, Mr. AIKIN.]—(Crosby Marsh, near Liverpool. Dr. BOSTOCK. E.) P. June—July.

gramin'eus. R. Leaves spear-strap-shaped, (marked with many nerves, sitting; E.) stem upright, very smooth, few-flowered.

*E. bot.* 2306—*Bauh. hist.* iii. 866. 3.

About a foot high. Leaves quite smooth, sitting, long and narrow like those of Grasses. Flowers pale yellow, smaller than those of the *R. lingua*. (Calyx perfectly smooth, lying open, but not reflexed. E.)

*Grassy Crowfoot.* Specimens brought from North Wales, by Mr. PRITCHARD. P. May—June

(2) *Leaves dissected and divided, not uniform.*

auricomus. R. Root-leaves kidney-shaped, scalloped, cut; stem leaves fingered, strap-shaped; stem many-flowered.

*Curt.-E. bot.* 624—*Fuchs.* 156—*Trag.* 97—*J. B.* iii. 857. 3—*Lonic.* i. 162. 2—*Kniph.* 2—*Fl. dan.* 665—*Lob. ic.* 669. 2—*Ger.* 954. 7—*Park.* 326. 7—*Pet.* 38. 2—*H. ox.* iv. 28. 15—*Pet.* 38. 6—*Ger.* 807. 8.

*Root-leaf* heart-shaped. *Stem-leaves*, the lower bird-footed on leaf-stalks, broader, blunt; the upper fingered, sitting, opposite, embracing the stem. *Stem* forked or 3-forked. *Calyx* united at the base, scarce perceptibly woolly. *Petals*, during the season for the leafing of trees, wanting, in the season of the flowering of trees 2 or 3, in the season of fruiting 5, whence it may be easily taken for a different plant. LINN. *Nectary* a small oblique hole at the bottom of the petals not covered by any scale. CURTIS. *Calyx* and *Blossoms* yellow. (Stem about a foot high leafy, slightly hairy on the upper part. Leaves very slightly pubescent, the root-leaves on long leaf-stalks; the stem-leaves

ting. *Calyx* hairy, not reflexed, yellow. *Nectary* naked. Not acrid as some of its congeners are, *Fl. Brit. E.*)

*Sweet Wood Crowfoot. Goldilocks.* Woods, groves, and edges. [In a clayey soil, Mr. WOODWARD.] P. April—May.

. Lower-leaves hand-shaped, the upper fingered; fruit scelera'tus. oblong.

*E. bot.* 681—*Curt.*—*Fl. dan.* 571—*Fuchs.* 159—*Trag.* 93—*J. B.* iii. 858. 1—*Lonic.* i. 163. 2—*Dod.* 426. 2—*Lob. obs.* 382. 1, and *ic.* i. 669. 1—*Ger. em.* 962. 4—*Park.* 1215. 6—*Pet.* 38. 11—*H. ox.* iv. 29. 27 and 28—*Matth.* 610.

*Root-leaves* kidney-shaped, lobed, on long leaf-stalks. *Petals* small. *Receptacle* egg-shaped. WOODWARD. Plant dark green, succulent, much branched. *Stem* smooth, hollow, thick. *Leaves* smooth, with 3 or 4 deep divisions; segments spear-shaped, more or less jagged. *Flowers* small, yellow. *Fruit* conical, or oblong egg-shaped. (Plant light-coloured, and smooth, says Dr. Smith. *Flowers* numerous, pedunculated. *Fruit* egg-oblong, with very many seeds. E.)

*Round-leaved Water Crowfoot. Celery-leaved Crowfoot.* Shallow waters. A. May—June.\*

. *Calyx* expanding; fruit-stalks cylindrical; leaves with 3 divisions, and many clefts, the uppermost strap-shaped. a'cris.

*Curt.*—*E. bot.* 652—*Woodv.* 246—*Walc.*—*J. B.* iii. 416—*Blackw.* 31. 2 and *e*—*Dod.* 426. 1—*Lob. obs.* 379. 2; and *ic.* i. 665. 1—*Park.* 328. 2—*Pet.* 38. 3—*H. ox.* iv. 28. 16.

*Stem* with hairs laid to, (upright, two feet high, branching upwards. E.) *Calyx* hairy, coloured. *Leaves* hairy, segments black or deep purple at the points; *stem-leaves* sitting, but sheathing the joints. *Leaf-stalks* hairy. *Fruit-stalks* not furrowed. *Blossom* yellow.

*Upright Butter Flower, or Butter Cups. Upright Meadow Crowfoot.* Meadows and pastures, very common.

P. June—July.†

\* The whole plant is very corrosive; and beggars are said to use it to grate their feet, which they expose in that state, to excite compassion.—Cats eat it. Cows, horses, and sheep refuse it.

† Sheep and goats eat it. Cows, horses, and swine refuse it. LINN. says and horses leave this plant untouched, though their pasture be ever so green.—It is very acrid, and easily blisters the skin.

Var. 2. Fruit-stalks flattened; flowers small.

Pool dam in Edgbaston Park, near Birmingham; the end of June.

(Frequently cultivated in gardens with double blossoms. E.)

(3) *Leaves dissected and divided; uniform.*

parviflorus. R. Seeds rough with tubercles ending in hooked points; leaves heart-shaped, hairy, lobed or toothed; stem prostrate.

*E. bot.* 120—*Ray.* 12. 1. at p. 326—*H. ox.* iv. 28. 21—*Pet.* 38. 9—*Pluk.* 55. 1.

Whole plant trailing close on the ground. *Root-leaves* on very long leaf-stalks, kidney, or heart-shaped, toothed. *Stem leaves* kidney-shaped; upper ones sitting, simple or with 3 divisions, all the leaves extremely soft to the touch like the nose of a horse. *Flowers* small, yellow. *Seeds* flattened; the hooked prickles very minute.

*Small-flowered Crowfoot.* Corn fields and meadows, in a gravelly soil. Near Camberwell; and Greenstreet Green not far from Dartford, Kent. [Malvern Hill, Worcestershire. Mr. BALLARD.—Near Norwich. Mr. PITCHFORD.—and Worcester. ST.—St. Vincent's Rocks, near Bristol. Mr. SWAYNE.—(Bootle, near Liverpool. Dr. BOSTOCK, and Crosby. Mr. SHEPHERD. E.)—Lymington and Lulworth Cove, Dorsetshire, plentiful.

A. May—June.

hedera'ceus. R. Leaves roundish, 3-lobed, very entire; stem creeping.

*Curt.* 247—*E. bot.* 2003—*Fl. dan.* 321—*J. B.* iii. 782. 2—*H. ox.* iv. 29. 29—*Pet.* 38. 12.

*Leaves* shining, some kidney-shaped, lobes nearly heart-shaped. *Leaf-stalks* flattened. *Fruit-stalks* not furrowed. *Petals* spear-shaped, white. *Stamens* 5, 6, 7, rarely more. *Nectaries* yellowish. *Seeds* smooth. (*Stems* prostrate, or floating on water; radicating. E.)

*Ivy-leaved Crowfoot.* On the mud of slow shallow rivulets. Watery places, ditches, and slow streams. [Frequent in Suffolk. Mr. WOODWARD.]—(In a ditch by Brislands End, near Birmingham. E.)

P. June—Aug.

(alpes'tris. R. Leaves very smooth; root-leaves nearly heart-shaped, blunt, 3-cloven, lobed; that of the stem spear-shaped, very entire; stem with one flower.

*Jacq. Austr. t. 110.*

*Petals* inversely heart-shaped, of a brilliant white. *Calyx* smooth, bordered with white. *Stem-leaf* often ternate; the radical ones greatly resemble those of *R. aquatilis* that float on the surface, and in watery places may be mistaken for them. *Lin. tr. v. 10. p. 434.*

We are indebted to the researches of Mr. DON for this addition to the British Flora. That gentleman discovered it by the sides of little rills, and in other moist places about two or three rocks on the mountain of Clova, Angus-shire, very rare, and but seldom flowering. Mr. Don suggests that its herbage, bearing a great resemblance to several of its kindred, may easily have been overlooked, but when in blossom it is truly a splendid plant. P. E.)

2. Leaves under water hair-like; those above with nearly central leaf-stalks. *aquatilis.*

*E. bot.* 101—*Pet.* 39. 1—*J. B.* iii. 781. 1—*Barr.* 565—*Dod.* 587. 2—*Lob. obs.* 497. 2, and *ic.* ii. 35. 2—*Ger. em.* 829. 2—*Park.* 1216. 8—*H. ox.* iv. 29. 31.

*Flowers* on fruit-stalks which arise from the same sheath with the leaves; white, with a yellow spot at the base. *Nectary* a short open tube. (*Stems* floating, submersed, lengthened out, cylindrical, leafy. E.)

*Water Crowfoot.* Ponds and ditches. P. May—July.

Var. 2. *large-flowered.* None of the leaves hair-like; flowers very large.

In a pool that had been a quarry, near Sodbury, Gloucestershire, Mr. SWAYNE.

Var. 3. *circinatus.* All the leaves hair-like, forming a roundish outline.

*Pluk.* 55. 2—*Pet.* 39. 3—*C. B. pr.* 73. 2—*J. B.* iii. 784. 1—*Park.* 1257. 8.

Var. 4. *diffusus.* All the leaves hair-like, segments spreading, outline irregular.

*H. ox.* iv. 29. 32—*Ger.* 679—*J. B.* iii. 781. 2—*Pet.* 39. 2.

Var. 5. *fluviatilis.* All the leaves hair-like; segments very long, parallel, taking the direction of the stream.

*Fl. dan.* 376—*J. B.* iii. 782. 1—*Lob. ic.* i. 791. 1—*Ger. em.* 827. 3—*Park.* 1256. 5—*Pet.* 39. 4.



Rivers. River Tame about Tamworth, &c. the Isis, near Oxford, [and in shoals in the Severn, where it is called *Rait*. ST.]

(This is a troublesome weed in ponds, but its flowers are very beautiful, when in such profusion as to cover the whole surface of the water. The varieties in the leaves seen entirely occasioned by the greater or less depth of the water, and by its being stagnant or not. E.\*)

*hirsutus*.

*R.* Root fibrous; stem hairy; calyx pimpled, hairy, taper pointed, at length reflected. (CURTIS.)

*Curt.—E. bot.* 1504—*J. B.* iii. 417. 3.

*Stem* more branched and spreading; hairs stiffer and longer than in *R. bulbosus*. *Leaf-stalks* of the lower leaves hollow, and if cut asunder, the nerves appear projecting into the inside of the tube. *Leaves*, lobes 3 more distinct, the middle and outermost rounder and less deeply divided at the edges, the side ones with a portion as if cut out from the inner edge; frequently with irregular pale or whitish spots, and the upper surface beset with projecting points, from which the hairs arise. *Flowers* more numerous, smaller, and *seeds* smaller than in *R. bulbosus*. CURTIS. *Root*, fibres long, thick, white. *Root-leaves* either entire or 3-lobed, the middle leaf fit on a leaf-stalk. *Flowers* pale yellow. WOODWARD.

Mr. Curtis thinks it not an uncommon plant, but that its reflected calyx has imposed upon botanists, who from that circumstance have considered it as the *R. bulbosus*.

(*R. parvulus*, inserted in Fl. Brit. as a new species, has been fully ascertained by Mr. D. Turner and Mr. Forster to be only a starved procumbent plant of *R. hirsutus*. vid. Bot. Guide, v. 1. p. 277. E.)

*Pale Hairy Crowfoot*. Moist clayey places, where water has stood during the winter. Salt marshes near Gravesend. RAY.—Various places about London; side of the road between Croydon and Mitcham; and plentifully by the sea side on the gravelly banks about Southampton. CURTIS.—Road sides, rubbish, &c. Cambridgeshire. RELHAN.—[Amongst corn in a clayey soil, and on new made banks of salt marshes, Yarmouth. Mr. WOODWARD.] —(Crosby, near Liverpool. Dr. BOSTOCK. E.) A. June—Sept.

*bulbosus*.

*R.* Root bulbous; calyx reflected; fruit-stalks furrowed; stem upright, many flowered; leaves compound.

\* So far is this plant from possessing the deleterious qualities usually attributed to it, that Dr. Pulteney, in the fifth Vol. of the Lin. Trans. has given ample testimony to its capability of almost alone supporting horses, cows, and pigs in good condition, and the animals eat it with avidity.

*E. bot.* 515—*Mill. ill.*—*Curt.—Kniph.* 7—*Walc.—Fl. dan.* 551—*Dod.* 431. 1—*Lob. obs.* 380. 3, and *ic. i.* 667. 1—*Ger.* 953. 6—*Park.* 329. 5—*Pet.* 38. 4—*Fuchs.* 160—*J. B.* iii. 417. 4—*Ger.* 806. 6—*Matth.* 614.

*Root* globular, fibrous at the base. *Stems* a foot high, upright, bare at the base, towards the top leafy, and branched. *LYONS.* *Calyx* at the bottom thin and semi-transparent. *Stem* never throwing out suckers like the *R. repens*. *CURTIS.* *Upper-leaves*, divisions strap-shaped. *Bulb* formed above the bulb of last year. When it comes into flower, the old one, in a dry soil, may be found in a state of decay under the new one, and surrounded by the fibres, but without the least appearance of suckers proceeding from either of them. In a turf containing six plants, the roots were all distinct, excepting one, which appeared, from its size, to be a seedling, with the old bulbs at the bottom. *Petals* bright yellow. *Mr. WOODWARD.* *Bulbous root* globular, but compressed. *Nectary* short, inversely heart-shaped; but in the *R. hirsutus*, it is oblong-egg-shaped. This circumstance alone is sufficient to distinguish the two species.

*Butter Cups.* *Gold Cup.* *Bulbous Crowfoot.* Meadows and pastures. P. May.

R. *Calyx* expanding; fruit-stalks furrowed; suckers creeping; leaves compound. *repens.*

*Curt.* 211—*E. bot.* 516—*Blackw.* 31. 1—*Fl. dan.* 795—*Dod.* 425—*Lob. obs.* 379. 1. and *ic. i.* 664. 2—*Ger. em.* 951. 1—*Pet.* 38. 7 and 8—*H. ox.* iv. 28. 18—*Pet.* 38. 8—*Ger.* 804. 1.

The *stem* creeping and striking out roots from the joints, will always distinguish this from the *R. bulbosus*. *Fruit-stalks* with five furrows, and one or two flowers. *Calyx* hairy, deciduous, not reflected. *Blossom* of a deeper yellow than in the *R. acris*.

*Creeping Crowfoot.* *Creeping Butter Cups.* Meadows, pastures, on rubbish under hedges, and in gardens, in moist situations. P. June—Aug.

R. *Seeds* prickly; upper leaves doubly compound, strap-shaped. *arven'sis.*

*Curt.—E. bot.* 135—*Kniph.* 12—*Walc.—Fl. dan.* 219—*Fuchs.* 157—*J. B.* iii. 859. 1—*Dod.* 427. 2—*Lob. obs.* 380. 1, and *ic. i.* 665. 2—*Ger. em.* 951. 3—*Park.* 328. 4—*H. ox.* iv. 29. 23—*Pet.* 38. 10—*Ger.* 805. 3.

## POLYANDRIA. POLYGYNIA. Trollius.

(*Stem* nearly smooth, upright, very much branched, cylindrical. *Petals* inversely egg-shaped. E.) Whole *plant* pale; upright, branched. *Segments* of the upper leaflets strap-shaped. *Flowers* small, pale yellow. *Seeds* (very large; E.) more obviously prickly than those of the *R. parviflorus*. *Seeds* and *flowers* existing on the same plants, at the same time.

*Corn Crowfoot*. Common in corn fields. A. June.\*

**TROL'LIIUS.** *Cal.* none: *petals* about 14: *capsules* many, egg-shaped, many-seeded.

Europæ'us. T. *Petals* approaching; nectaries as long as the stamens.

*Kniph.* 4—*Fl. dan.* 133—*E. bot.* 28—*Clus.* i. 237. 1—*Dod.* 430. 1—*Lob. obs.* 385. 1, and *ic.* i. 675—*Ger. em.* 955. 12—*Ger.* 809. 13—*J. B.* iii. 419—*H. ox.* xii. 2. 2—*Matth.* 613—*Park. par.* 219. 11.

(*Stem* upright, about two feet high, cylindrical, smooth, branching upwards. *Seeds* black and shining. E.) *Blossoms* closed, yellow. *Nectaries* yellow, not longer than the stamens. *Germens* upright. LINN. *Leaves* round in their circumscription, divided to the base into five, segments very entire at the base, jagged upwards. *Capsules* ribbed transversely, terminated by a crooked horn, pointing outwards, giving the head a star-like appearance. Mr. WOODWARD.

*Globe-flower.* *Gowlans.* Sides of mountains and mountainous meadows in Wales and the North of England. HUDSON.—Skirrieth Wood, and moist woods about Settle, Yorkshire. CURTIS.—Scotland. LIGHTFOOT.—[Near Troutbeck, Westmoreland. WOODWARD.—At the road side near Dale Park, in Furness Fells. Mr. ATKINSON.—Marshes in the county of Durham, common. Mr. ROBSON.]—(Meadows at Hays, Shropshire, plentifully. WARING.—Boggy grassy lands to the left of the road from Dolgelle to Trawsfynaid, Merionethshire. Rev. J. DAVIES, in *Bot. Guide.* E.)

P. May—June.

It is cultivated in flower gardens.

**HELLE'BORUS.** *Bloss.* none: *cal.* 5 leaves, often coloured: *nectaries* 2-lipped, tubular: *caps.*

\* It has lately been said that cows, horses, and sheep in Italy eat it greedily, though it is so acrid as to poison the latter. Three ounces of the juice killed a dog in four minutes. Its growing chiefly, if not solely, in corn-fields, where cattle are excluded, may possibly be the reason why we have not heard of mischief being done by it in this country.

like a legumen ; many-seeded, rather upright,  
beaked.

H. Stem many-flowered, leafy ; leaves finger-like ; (petals v'ridis.  
expanding. Fl. Brit. E.)

*Jacq. austr.* 106—*Curt.—Blackw.* 509 and 510—*E. bot.* 200—*Kniph.* 1—*Fuchs.* 274—*J. B.* iii. 636—*Clus.* i. 275. 1—*Dod.* 385. 2—*Lob. obs.* 387. 2. and *ic.* i. 680. 2—*Ger. em.* 976. 2—*Park.* 212. 2 and 3—*H. ox.* xii. 4. 5—*Ger.* 825. 2—*Trag.* 405—*Lonic.* i. 171. 2—*Matth.* 1221.

*Pistils* 3, sometimes 4, rarely 5. *CRANTZ.* *Segments* of the leaves deeply serrated, particularly upwards. *Flowers* mostly 2 ; yellowish green. (*Root* fleshy, black, with many long fibres. *Stem* upright, half a foot high, forked at the top, leafy, very smooth. *Leaves* extremely smooth, shining ; root-leaves petioled, stem-leaves sitting. *Fl. Brit. E.*)

*Green-flowered Hellebore.* Woods and dry pastures in chalky soil. Bigwin Closes, Ditton, and Whitwell, Cambridgeshire. Arundel Castle, Sussex. Knowlton, E. Kent ; and Stoken Church, Oxfordshire. [Orchard near Mr. Ballard's, Robinson's End, Malvern Chace. Mr. WELLS. Near Piersbridge, but scarce. Mr. ROBSON.]—(Near Harefield, Middlesex. Miss JANE BAYNES. *Fl. Brit.*—Kiddow Lane, between Leeds and Tadcaster ; about Aberford. Rev. W. WOOD.—Banks of the river opposite the mill, Knaresborough. Rev. J. DALTON. *Bot. Guide.* E.) P. March—May.

H. Stem many-flowered, leafy ; leaves bird-footed ; (petals fœ'tidus.  
closing. Fl. Brit. E.)

*E. bot.* 613—*Woodv.* 19—*Kniph.* 12—*Blackw.* 57—*Fuchs.* 275—*J. B.* iii. 880—*Trag.* 251—*Dod.* 386—*Lob. obs.* 387. 4. and *ic.* i. 680. 1—*Ger. em.* 976. 4—*Lob. obs.* 387. 3. and *ic.* i. 679. 2—*Ger. em.* 976. 3—*Park.* 212. 3—*H. ox.* xii. 4. 6—*Ger.* 826.

All the *leaves* on the stem, none towards the root. LINN. *Leaves* deep green. *Branches*, *leaf-scales*, *floral-leaves*, and *flowers* pale greenish yellow. *Stipulas* at the divisions of the branches oval-spear-shaped, embracing the stem, solitary, with 3 deep clefts at the end tinged with purple. *Floral-leaf* oval-spear-shaped, entire, solitary, at the base of each fruit-stalk, tinged with purple.\* Mr. WOODWARD. *Flowers* numerous, somewhat globular, green, sometimes tinged with purple at the edges. *Stem* about a yard high.



*Bear's-foot. Setterwort. Stinking Hellebore.* Meadows, shady places, and hedges. Cherry-hinton, Fulbourn, Trip-low, Cambridgeshire. Downs near Chichester, Sussex. Woods between Gounsbery and Blackwell, Somersetshire. [Bath Hills, near Bungay, Suffolk. Mr. WOODWARD. Woods in Tortworth Park, Gloucestershire. Mr. BAKER. Rockingham Forest, Northamptonshire, common. Mr. PITT.] (Lanes at Campsall, near Doncaster. TEESDALE. Woods in Allondale, Northumberland. Mr. WINCH. *Bot. Guide. E.*) P. April.\*

**CAL'THA.** *Calyx* none: *petals* 5: *nectaries* none: *capsules* several: many-seeded.

palus'tris. C.

*E. bot.* 506—*Kniph.* 7—*Munt. phyt.* 436. 122—*Curt.—Fl. dan.* 668—*Matth.* 846—*Clus.* ii. 114. 1—*Dod.* 598. 1—*Lob. obs.* 323. 2. and *ic.* i. 594. 1—*Ger. em.* 817. 1—*Trag.* 142—*J. B.* iii. 470—*Lonic.* i. 88. 3—*Park.* 1213. 1—*Ger.* 670. 2 and 1—*Walc.*

*Capsules* from four to twelve. Mr. HOLLEFEAR. *Leaves* kidney-shaped, entire, sometimes regularly toothed. *Petals* yellow, from five to seven. *Stamens* in two rows, inner row with broad anthers, outer row twice as long, club-shaped, with the anthers compressed. (*Stem* half a foot high, but little branched, upright, furrowed, smooth. *Leaves* heart-shaped, veined. *Fl. Brit. E.*)

Var. 2. Blossoms double.

*Park.* 1213. 2—*Clus.* ii. 114. 2—*Ger. em.* 818. 3—*Ger.* 681. 3.

*Marsh Marigold. Meadow-bouts.* Moist Meadows. Banks of rivers and pools, common. P. April—May.†

\* The dried leaves are frequently given to children to destroy worms, but they must be used sparingly, being violent in their operation; and instances of their fatal effects are recorded. The country people put the root into setons made through the dewlaps of oxen. A decoction of one or two drachms, either of this, or of the preceding species, is a sharp purge.

† The flowers gathered before they expand, and preserved in salted vinegar, are a good substitute for Capers. The juice of the petals, boiled with a little alum, stains paper yellow. The remarkable yellowness of butter in the spring has been supposed to be caused by this plant; but cows will not eat it, unless compelled by extreme hunger, and then, Boerhaave says, it occasions such an inflammation that they generally die. Upon May-day the country people strew the flowers before their doors.

(Var. 3. Stem creeping; leaves triangular, somewhat heart-shaped, sharply crenate. *Caltha radicans*. FORSTER. *Linn. Trans.* v. 8. t. 17—*E. bot.* 2175. Said to have been found by Mr. G. Don, and also by Mr. Dickson, in Scotland. Though the plates above referred certainly exhibit a general appearance unlike the usual representations of *C. palustris*, we apprehend on an examination of many specimens, the plant now in question will scarcely be found uniformly to bear out a specific character peculiar to itself, more especially when we remark the variations to which these plants are liable. On examining those in our herbarium we find some resembling Mr. Forster's, mixed with almost every gradation between them and the more common appearance of *C. palustris*. We observe leaves with entire or crenate edges even on the same plant, and also exhibiting the gradation from the heart or kidney, to the triangular shape. The stalk we suspect may be found creeping or upright, in a moist or dry situation, indeed, the uncertainty of this characteristic is admitted in the *English Botany*. It is natural to the species to vary greatly in size, and we venture to believe the uxuriant picture by Curtis equally correct with the stunted and diminutive representations of *Kniphofius* or the *Flora Danica*. E.)

**SAGITTA'RIA.** *Stamens* and *pistils* in different flowers on the same plant: *cal.* 3 leaves: *bloss.* 3 petals.

Male. *Filam.* about 24.

Fem. *Seeds* many, naked.

S. Leaves arrow-shaped, acute.

sagittifolia.

*E. bot.* 84—*Gies.* 64—*Fl. dan.* 172—*Walc.* 5—*Dod.* 588. 2—*Lob. obs.* 161. 2, and *ic.* i. 302. 1—*Ger. em.* 416. 2—*Park.* 1247. 2—*J. B.* iii. 789—*Pet.* 43. 11.

*Stalk* with six edges. *Leaves* all from the root; the first which are always under water, long, strap-shaped, by some authors considered as a variety, and well figured in *Fl. dan.* 172, and ill done in *Pet.* 43, 9; the succeeding, which rise above the water, arrow-shaped, very entire, smooth, with parallel ribs and a net-work of veins. *Leaf-stalks* tapering, convex underneath, concave above, covered by the water. *Flowers* three in a whirl. *Flower-scales* small, oval spear-shaped, one at the base of each fruit-stalk, embracing the stem. *Fruit-stalks* of the barren flowers an inch long, of the fertile flow-

ers about half an inch, and stronger. *Calyx* one leaf with three divisions. Lower flowers female, the upper male, but with from one to five pistils; none with stamens only. *St.* *Flowers* white with a purplish tinge at the claws of the petals, but so readily falling off that it is difficult to carry them home for examination.

*Common Arrow-head.* Ditches and banks of slow rivers.

P. July\*

Var. 2. *smaller.* *Ger.* 337—*J. B.* iii. 790. 2—*Pet.* 43. 12.

On the Thames shore, opposite Lambeth palace; and before the Earl of Peterborough's house, above the horse ferry, on Westminster side. *R. Syn.* The other varieties mentioned by authors appear to me to differ merely in size. The  $\delta$  of Linnæus and  $\beta$  of Haller, are surely imaginary, for the strap-shaped leaves will be always found both before and after flowering. **WOODWARD.**

## CLASS XIV.

# DIDYNAMIA.

## GYMNOSPERMIA.

(1) *Cups mostly 5-cleft.*

**LEONU'RUS.** *Anthers* sprinkled with hard particles.

**GLECO'MA.** *Anthers* in pairs; each pair forming a cross.

**MEN'THA.** *Filaments* distant; straight: *Bloss.* nearly regular.

**VERBENA.** *Bloss.* nearly regular: upper segments of the cup shorter.

**TEU'CRIUM.** *Bloss.* without any upper lip; upper segment of the petal divided.

\* There is always a bulb at the lower part of the root, growing in the solid earth, beneath the mud. This bulb constitutes a considerable part of the food of the Chinese, and upon that account they cultivate it.—Horses, goats, and swine eat; cows are not fond of it.

- A'JUGA. *Bloss.* upper lip shorter than the stamens.
- GALEOB'DOLON. *Bloss.* upper lip entire, vaulted; lower lip 3-cleft; segments broad, acute: *Anthers* fleshy on the back. (Huds.)
- BETO'NICA. *Bloss.* upper lip flat; ascending: *Tube* cylindrical: *Stam.* as long as the mouth of the tube.
- LA'MIUM. *Bloss.* with a bristle-shaped tooth on each side the lower lip, (on each side the mouth.)
- GALEOP'SIS. *Bloss.* with 2 teeth upon the lower lip.
- STA'CHYS. *Bloss.* lateral segments of the lower lip reflected: *Stamens* after flowering turned to the sides.
- NE'PETA. *Bloss.* lower lip scalloped: *Mouth* with the edge reflected.
- BALLO'TA. *Cup* with 10 scores: *Bloss.* upper lip vaulted.
- MARRU'BIUM. *Cup* with 10 scores: *Bloss.* upper lip flat and straight.
- [*Origanum. Thymus Nepeta.*]

(2) *Cups 2-lipped.*

- SCUTELLA'RIA. *Cup* after flowering closed with a cover, and resembling a helmet.
- THY'MUS. *Cup* (mouth small;) closed with soft hairs.
- PRUNEL'LA. *Filaments* all forked at the end.
- ORIG'ANUM. *Cups* forming a tiled cone.
- CLINOPO'DIUM. *Cups* inclosed in an involucre.
- MELIT'TIS. *Cup* wider than the tube of the blossom: *Upper lip* of the blossom flat; entire *Anthers* crossing each other.
- [*Teucrium.*]

ANGIOSPERMIA.

(1) *Cups cloven.*

- OROBAN'CHE. *Caps.* 1-celled: *Bloss.* nearly equal; 4-cleft: a *gland* under the base of the germs.



DIDYNAMIA. GYMNOSPERMIA. *Ajuga*.(2) *Cups 4-cleft.*

LATHRÆA. *Cups* 1-celled: *Bloss.* gaping: a *gland* under the base of the germen.

BARTSIA. *Caps.* 2-celled: *Bloss.* gaping: *Cup* coloured: (*not coloured in our species.*)

EUPHRA'SIA. *Caps.* 2-celled: *Bloss.* gaping: lower *Anthers* with thorns.

RHINANTHUS. *Caps.* 2-celled: *Calyx* compressed: *Bloss.* gaping.

MELAMPYRUM. *Caps.* 2-celled: *Bloss.* gaping: *Seeds* 2; bulging.

(3) *Cups 5-cleft.*

LIMOSELLA. *Caps.* 1-celled, many-seeded: *Bloss.* bell-shaped; regular.

SCROPHULARIA. *Caps.* 2-celled: *Bloss.* facing upwards; the lip with a middle segment more inward.

SIBTHORPIA. *Caps.* 2-celled: *Bloss.* wheel-shaped: *Stam.* placed 2 and 2; approaching.

DIGITALIS. *Caps.* 2-celled: *Bloss.* (tubular) bell-shaped; bellying on the under side: *Stam.* declining.

ANTIRRHINUM. *Caps.* 2-celled: *Bloss.* gaping; with a projecting nectary beneath.

PEDICULARIS. *Caps.* 2-celled: *Bloss.* gaping: *Seeds* coated.

LINNÆA. *Berry* 3-celled, juiceless: *Bloss.* bell-shaped: *Calyx* superior.

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 GYMNOSPERMIA.

AJUGA. *Bloss.* upper lip very small: *stamens* longer than the upper lip.

A. Plant woolly, forming a 4-sided pyramid: leaves ob-pyramidalis. long, toothed: root-leaves the largest.

*Fl. dan.* 185—*E. bot.* 1270—*Blackw.* 64. 2.

(*Plant* four or five inches high. *E.*) *Plant* as taken from the bottom to the top resembling a pyramid, very simple, clothed with leaves pointing four ways, gradually increasing in height, the whole often decorated with leaves which, excepting the root-leaves, are of a violet colour, serpentine at the edge, imperfectly scalloped. *Flowers* whitish, or bluish. *Suckers* none. *Flowers* three together. *LINN.* *Stem* and *leaves* very hairy; *root-leaves* oblong wedge-shaped, sitting, entire, very large; *stem-leaves* oval, slightly toothed or scalloped, not three-lobed, diminishing upwards, so as to give the whole plant somewhat of a pyramidal form; in opposite alternate pairs; the upper tinged with purple. *Floral-leaves* longer than the flowers. *Flowers* from the bosom of the leaves, not more than three together. *Calyx* very hairy, divided half way down; *segments* awl-shaped, nearly equal. *MR. WOODWARD.*

*Pyramidal Bugle.* I have never seen a specimen of British growth; the plant generally taken for it is the *A. alpina*. *MR. Woodward* thinks he had once in his garden the *A. pyramidalis*, which he received from the North of England, but does not recollect the particular place. *Dr. Hope* informs me that it has been found on Ben Nevis in Lochaber, and on the Burn of Killogower, and Ord of Caithness. (We learn from *E. bot.* that this plant has been also gathered on Tore Aichaltie, a hill near Braham Castle, the seat of Lord Seaforth, by *MR. GIBB.* *P. May—June. E.*)

A. Stems simple; leaves nearly all of a size. *LINN.* mid-alpina. dle stem-leaves the largest; root-leaves smaller, tapering into leaf-stalks.

*E. bot.* 477—*Ludw.* 8—*Kniph.* 3—*J. B.* iii. 432. 1—*Pet.* 34. 4—*Riv. mon.* 76; *Bugula montana.*—*H. or.* xi. 5. 3. *bad.* —*Pluk.* 18. 3; *bad*; not agreeing with his description; very unlike the *A. pyramidalis*, and too meagre for the *A. alpina*—*Clus.* ii. p. 43, *Bugula carneo flore*, quoted by *Linnaeus*, seems from the creeping suckers, to be only a hairy var. of the *A. reptans*.

“ The pairs of the leaves and the whorls are rather distant, by no means crowded into a pyramidal form as in *A. pyramidalis*, nor are the radical leaves (as in that species) three or four times as large as those on the stem, and very hairy; but, on the con-

trary, the lower leaves are but little larger than the others, and all very nearly smooth, veiny, unequally toothed. The *bracteæ* sometimes quite entire, sometimes toothed; the uppermost only tinged with purple; whereas in *A. pyramidalis*, they are all reddish. *Flowers* from ten to twenty in each whorl. *Calyx* chiefly hairy at the teeth. *Flowers* pale, streaked with deeper blue." *E. bot.*

This plant, according to Dr. SMITH, has been lately found near Durham by Mr. ROBSON, and on the summit of a mountain near Castleton, Derbyshire, by Mr. DAWSON TURNER.

*Alpine Bugle.* Mountains. Carnedd Llewelyn, Caernarvonshire. RAY. (On the flat near the summit of that mountain. Mr. GRIFFITH. On the mountain that leads from Matlock into the town of Castleton, on the left hand side, immediately adjoining the road. Mr. DAWSON TURNER. It is erroneously stated in *English Botany* that this plant has been found in Durham by Mr. Robson: the specimen he sent to Sowerby was from his own garden. Mr. WINCH, in *Bot. Guide*. E.)

P. June—July.

rep'tans.

A. Plant smooth; with creeping suckers; leaves egg-shaped, scalloped.

*E. bot.* 489—*Curt.*—*Fl. dan.* 925—*Sheldr.* 35—*Riv. mon.* 75. 1, *Bugula.*—*Fuchs.* 391—*J. B.* iii. 430. 2. and 3—*Walc.*—*Kniph.* 3—*Trag.* 311—*Blackw.* 64. 1—*Lonic.* i. 145. 2—*H. ox.* xi. 5. row 3. 1—*Barr.* 337 and 338—*Matth.* 962—*Dod.* 135. 2—*Lob. obs.* 252. 1, and *ic.* i. 475. 2—*Ger. em.* 631. 1—*Park.* 525—*Ger.* 506. 1.

In high and dry situations it becomes somewhat hairy, the stem less distinctly four-sided, the spike tapering upwards; the creepers short; approaching to the *A. genevensis*, but has only one stem from a root whilst the latter has many. Mr. GOUGH. *Leaves* egg-shaped. *Root-leaves* scalloped, on leaf-stalks. *Stem-leaves* nearly entire, sitting, in opposite cross pairs; the upper purplish. *Blossom* blue, red, or white, in a long leafy spike. (*Stem* solitary, upright, nearly a foot high, quadrangular, leafy, tinged with purple. E.)

*Common Bugle.* Moist meadows, pastures, and woods.

P. May—July.

*Chamæpitys*. A. Leaves 3-cleft, strap-shaped, very entire: flowers sitting, lateral, solitary; stem spreading.

*E. bot.* 77—*Kniph.* 8—*Ludw.* 130—*Riv. mon.* 14. 1, *Chamæpitys*—*Fl. dan.* 733—*H. ox.* xi. 22. row 3. 1—*Dod.* 46. 1—*Lob. obs.* 207. 2, and *ic.* i. 382. 2—*Ger. em.* 525. 1—*Matth.* 940—*Ger.* 421. 1—*Park.* 283. 1—*Fuchs.* 886—*J. B.* iii. 295. 1 and 2—*Trag.* 80—*Blackw.* 528—*Lonic.* i. 159. 2.

*Blossom* yellow, with minute red dots. *RELHAN.* *Stem* hairy. *Leaves* hairy, the lower entire, the rest cloven deeper and deeper till the upper ones are almost divided to the base; segments trap-shaped. *Flowers* nearly on one side of the stalk, single, or in pairs. *Calyx* very hairy. *Blossom lower lip*, middle segment somewhat heart-shaped, smooth, the rest very hairy. *MR. WOODWARD.*

*Ground Pine. Germander. Teucrium Chamæpitys. LINN.* But the structure of the upper lip of the blossom is not like that of the *Teucrium*, deeply divided with the stamens standing in the division, but short and slightly notched as in the *Ajuga*. On this account it has been removed from the former genus by *Haller, Schreber, &c.* and *Dr. Smith* in *E. bot.* ranks it as an *Ajuga*, to which genus it undoubtedly ought to be referred in a practical system.

Sandy fallow fields. On the Lays about the border of Triplow Heath, Cambridgeshire; about Rochester and Dartford, Kent. Roehill. (Cornfields about Tunbridge Wells. *FORSTER.* Frequent in Surrey and Kent. At St. David's, Pembrokeshire, on the walls and houses. *Sir T. G. CULLUM.* In cornfields near Purfleet, Essex. *MR. E. FORSTER, jun.* Dry pastures on Luton Downs, Bedfordshire. *MR. J. SIBLEY.* *Bot. Guide. E.)* A. April—June.\*

**TEUCRIUM.** Upper lip upright, deeply divided, even below the base: stamens in the division.

*T.* Leaves wedge-egg-shaped, cut, scalloped, on leaf-stalks, flowers 3 together; stems somewhat hairy. *Chamædry.*

*E. bot.* 680—*Woodv.* 243—*Kniph.* 11—*Tourn.* 97. 1.  $\beta$ .—*Sheldr.* 87—*Blackw.* 180—*Riv. mon.* 10—*Fuchs.* 869—*J. B.* iii. 288. 1—*Ger.* 530. 1, 2, and 3—*Matth.* 818—*Trag.* 204—*Lonic.* i. 62. 4—*Dod.* 43. 1, and 2—*Lob. obs.* 260. 1 and *ic.* i. 491. 1, and 2—*Ger. em.* 656. 1 and 2—*Park.* 104—*H. ox.* xi. 22, 10 and 11—*Clus.* i. 351. 1.

\* This plant has a degree of bitterness and acrimony, but its real use is far from being accurately ascertained. It stands recommended in the gout, jaundice, and intermitting fevers.



*Floral-leaves* serrated. *Blossom* purple; lip flat, with three shallow clefts. LINN. *Stem* cylindrical, hairy. *Leaves* on leaf-stalks, deeply jagged, entire at the base, hairy; the upper oval-spear-shaped, often purple. *Flowers* on fruit-stalks. Mr. WOODWARD. *Calyx* the upper segment broadest, the two lower ones narrowest, beset with white globules. *Blossom* reddish purple, beset without with white globules; middle segment of the lower lip lopped, with a double row of hairs at the base. (*Stems* nearly upright, branched. E.)

*Common Germander. Wall Germander.* Borders of corn-fields far from any house. Ruins of Winchelsea Castle, RAY. [Norwich city walls. Mr. CROWE. In the area of Carisbrook Castle in the Isle of Wight. ST. Rubbish of Whittington Castle, near Oswestry, Salop. Rev. S. DICKENSON.]

P. June—July.\*

Scorodo'nia. T. Leaves heart-shaped, serrated, on leaf-stalks; flowers in lateral bunches, pointing one way; stem upright.

Curt. 295—Kniph. 11—E. bot. 1543—Blackw. 9—Dod. 291—Lob. obs. 262. 1, and ic. i. 497. 2—Ger. em. 662—Park. 111. 2—H. or. xi. 20. 15—Riv. mon. 12—Fl. dan. 485—Trag. 15. 2—Lonic. i. 112. 3—J. B. iii. 295. 1, and 294.

*Stems* four-cornered, hairy, (leafy, half a foot high. E.) *Branches* opposite. *Leaves* heart-spear-shaped, opposite, wrinkled, (slightly glutinous, bitter. E.) *Flowers* in pairs. *Calyx* a little woolly, upper lip broad, bent back, pointed; the lower with four very shallow clefts terminating in pointed teeth bent inwards. *Blossom* straw-coloured, woolly; tube longer than the calyx; upper lip none, but the top of the tube slightly cloven. (*Stamens* violet-colour. E.)

*Wood Sage. Wood or Sage Germander.* Woods, heaths, thickets, and ditch banks.

P. July.†

Scor'dium. T. Leaves oblong, sitting, toothed, nearly naked; flowers in pairs, on fruit-stalks, axillary; stem pubescent, spreading.

\* The plant is bitter, with a degree of aroma, and may be used with advantage in weak and relaxed constitutions. It is an ingredient in the celebrated gout powders.

† The people of Jersey are said to make use of it in brewing. It possesses the bitterness and a good deal of the flavour of hops, but upon trial it gave too much colour to the liquor.

*E. bot.* 828-*Blackw.* 475-*Fl. dan.* 593-*Woodv.* 57-*Matth.* 842-*Ger.* 534. 1 and 2-*Trag.* 885-*Riv. mon.* 11-*Scordium*.-*Dod.* 126. 2-*Lob. obs.* 261. 3, and *ic.* i. 497. 1-*Ger. em.* 661-*Park.* 111. 1-*H. or.* 11. 22. 14-*Lonic.* i. 196. 3-*Fuchs.* 776-*J. B.* iii. 292. 2.

*Stem* cylindrical, hairy. *Leaves* hairy, sitting, tapering and entire at the base, serrated upwards, those at the top of the branches oval-spear-shaped, nearly entire. *Calyx* hairy, purplish. Lower flowers often solitary. **WOODWARD.** *Flowers* pink. (*Stem* procumbent, little branched, four-cornered, grooved, leafy. *Fl. Brit. E.*)

*Water Germander.* Marshes of the Isle of Ely. Between Cambridge and Histon. Waterbeach. Cottenham.

P. July—Aug.\*

**NE'PETA.** *Bloss.* middle segment of the lower lip scalloped; mouth, the edges reflected: stamens approaching.

*N.* Flowers in spikes; whirls on short fruit-stalks; leaves Cat'ria: on leaf-stalks, heart-shaped, tooth serrated.

*E. bot.* 137-*Blackw.* 455-*Fl. dan.* 580-*Kniph.* 9-*Dod.* 99-*Lob. obs.* 276. 1, and *ic.* i. 511. 1-*Ger. em.* 682. 1-*Pet.* 32. 1-*Matth.* 719-*Lonic.* i. 112. 1-*Riv. mon.* 52, *Nepeta*-*Trag.* 15. 1-*Ger.* 554. 1-*H. or.* xi. 6. row 2. 3.

*Leaves* of a velvet-like softness. *Whirls* mostly turned to one side of the stem. *Calyx* downy, with green ribs. *Blossom* white, with a tinge of red, and spotted with purple; *tube* nearly straight, *lower lip*, middle segment with six or seven equal teeth turned upwards, and set with a tuft of white bristles at the base. *Stamens* rather longer than the upper lip. *Stem* and *leaves* white with down. (The whole plant exhales an aromatic odour. *E.*)

*Nep. Cat-mint.* Pastures and hedges in a calcareous soil. Near Bungay, Suffolk. Mr. **WOODWARD.** Wick Cliffs. Mr.

\* The fresh leaves are bitter and somewhat pungent. Powdered they destroy worms. A decoction of this plant is a good fomentation in gangrenous cases. If cows eat it when compelled by hunger, their milk gets a arlick flavour. Sheep and goats eat it. Horses, cows, and swine refuse it.

SWAYNE.—On the beach at Rampside, Low Furness.  
 Mr. ATKINSON.—Dudley Castle. Needwood Forest, Staffordshire.] P. July.\*

**VERBENA.** *Bloss.* funnel-shaped, segments nearly equal: *calyx* one of its teeth lopped: *seeds* 2 or 4; naked.

*officina'lis.* V. Spikes thread-shaped, panicked; leaves with many jagged clefts; stem solitary.

*E. bot.* 767—*Ludw.* 149—*Curt.*—*Kniph.* 4—*Riv. mon.* 56—*Verbena.*—*Woodv.* 218—*Walc.*—*Clus.* ii. 45. 2—*Dod.* 150. 1—*Lob. obs.* 289: 2, and *ic.* i. 534. 2—*Ger. em.* 718. 1—*Park.* 675. 1—*Fl. dan.* 628—*Blackw.* 41—*Trag.* 210—*Matth.* 1052—*Ger.* 580. 1—*Fuchs.* 593—*J. B.* iii. 443—*Lonic.* i. 138. 2.

*Lower-leaves* deeply lobed, and jagged, the *upper* three-cleft, or simple. **WOODWARD.** *Stem* nearly four-cornered. *Flowering branches* in opposite pairs. *Floral-leaves* spear-shaped. *Calyx* one of the teeth much smaller and shorter than the rest, but not lopped; angles hairy. *Blossom tube* fringed at the top with hairs; *mouth* with two lips, the upper cloven into two, the lower into three nearly equal segments; purplish. *Stamens* four, two of them longer. *Seeds* four. The structure of the flower and fruit must inevitably lead the English botanist to look for it in this class, though Linnæus has placed it in the class *Diandria*, because the greater number of species have only two stamens. (*Root* woody, branched. *Stem* upright, rough with scattered prickles, curved at the bottom. *Stamens* very short, inclosed within the tube of the blossom. *Fl. Brit. E.*)

*Vervain.* *Simpler's Joy.* Waste places, stone walls, side of great roads. [At the foot of St. Vincent's Rocks all along the course of the river, very plentiful.]

A. Aug.—Sept. (*P. Fl. Brit. E.*)

\* An infusion of it is deemed a specific in chlorotic cases. Two ounces of the expressed juice may be given for a dose. Cats are so delighted with this plant, that they can hardly be kept out of the garden wherein it grows. Mr. Miller says, that cats will not meddle with it if it be raised from seeds and, in support of this opinion, quotes an old saying, "If you set it, the cat will eat it; if you sow it, the cats will not know it." It cannot well be planted without being more or less bruised. *ST.*—Sheep eat it. Cows, horses, goats and swine refuse it.

**MEN'THA.** *Bloss.* nearly equal: 4-cleft: the broader segments notched at the end; *calyx* 5-cleft: *stam.* upright, distant.

**OBS.** (The numerous species of Mints, till lately remaining in much confusion, will now be found arranged according to the most reformed plan of Dr. Smith, condensed from the *Menthæ Britannicæ* of Mr. Sole, whose very accurate and finely executed figures have greatly tended to facilitate the elucidation of this hitherto intricate genus; towards the proper arrangement of which, many valuable observations may also be found in an elaborate paper by the President of the Linnæan Society. LINN. trans. v. V. E.)

(1) *Flowers in Spikes.*

(M. Spikes hairy, scarcely interrupted; leaves with toothed-serratures, downy chiefly beneath; floral-leaves awl-shaped.

*Stem* nearly three feet high, upright, leafy, four-cornered, rough with hairs pointing downwards. *Leaves* sessile, opposite, varying in figure and breadth. *Spikes* terminating, panicled, sharpish, composed of numerous dense whorls, with but little space between even the lowermost: each whorl accompanied by a pair of tapering, projecting, awl-shaped *floral-leaves*, the lowermost of which are dilated at the base. *Calyx* small, hairy all over, with tapering teeth, longer than the tube. *Blossom* twice as long as the calyx, hairy, of a pale lilac colour. *Stamens* inclosed within the blossom. The whole herb has a strong aromatic smell.

Var. 1. Leaves spear-shaped, acute.

*M. villosa prima*, Sole. *Menth.* 3. t. 1—*E. bot.* 686—*Dod.* 96—*Ger. em.* 684. 3—*J. B.* iii. 221.

Var. 2. Leaves egg-shaped, acute.

*M. villosa secunda*, Sole. *Menth.* 5. t. 2—*Fl. dan.* 484—*Riv. mon.* 51. 1—*Fuchs.* 292.—*Cam. Epit.* 479.

By the water side at Bottisham Load mill, Cambridgeshire; in the house-close of an Inn at Hillington, Middlesex. Frequent in Hertfordshire. SOLE.

Var. 3. Leaves shorter; spikes blunter. Plentiful in Kent,

Var. 4. Leaves elliptical, broad, and blunt.

*M. rotundifolia*, Sole. *Menth.* 9. t. 4—*Fuchs.* 289.



DIDYNAMIA. GYMNOSPERMIA. *Mentha*.

In Kent and Essex, but rare. Eleven miles from Norwich in the road to Hingham. Mr. CROWE. At Thorpe, near Norwich. E.)

*Horse Mint.* Marshy and watery places. Burwelbeck, Lincolnshire; behind the alm-houses Great Yeldham, Essex. Lewisham, Kent; between Ripley and Guildford. [Bungay, Suffolk, frequent. Mr. WOODWARD. Thorn, Yorkshire. Mr. ROBSON.] P. Aug.

*rotundifolia.* (M. Spikes somewhat hairy, interrupted; leaves roundish, blunt, rugged, scolloped, downy beneath; floral-leaves spear-shaped. E.)

*E. bot.* 446—*Sole Menth.* 7. t. 3.—*Riv. mon.* 51. 2—*J. B.* iii. 219. 2.

*Leaves* rather serrated than scolloped. Whole plant woolly. *Flowers* pale red, (much resembling those of the preceding species. *Stems* two to three feet high, upright, square, hairy or shaggy, the hairs pointing more or less downwards. *Leaves* underside shaggy, not hairy; all the veins fringed with close hairs. *Spikes* several, terminal, upright, sharpish, not very densely whorled. *Calyx* small, bell-shaped, covered with rough hairs. *Stamens* much longer than the blossom. The whole herb strong smelling, and tending to viscosity. The leaves are occasionally found variegated with white. E.)

*Roundleaved Mint.* *M. rotundifolia.* LINN. *M. sylvestris.* SOLE. Watery places. River side, Lydbrook, near Ross, Herefordshire, near Faulkburn Hall, Essex, and near Hally, Kent. Hornsey and Harefield church-yards. BLACKSTONE. [Near Salthurn, Yorkshire, by the sea, in a dry sandy place. Mr. ROBSON.] (On the edge of an old moat at Shingham, Norfolk. Rev. Mr. FORBY. E.) P. Aug. ♥

*viridis*

M. Spikes interrupted; leaves spear-shaped, naked, serrated, pointed, sessile; stamens longer than the blossom.

\* (Mr. Sole states this to be the true *Menthastrum* of the shops, and deduces that the Monks, the physicians of their times, were well acquainted with its virtues, from its still being frequently found about the ruins of abbeys and monasteries. He finds it speedily cure chlorosis, and wonderfully refresh the brain, removing the dull stupid languor subsequent to epileptic fits. E.)

*Sole Menth.* 11. t. 5—*Woodv.* 170—*Cam. epit.* 477—*Ger.* 552. 2—*Dod.* 95. 4—*Lob. obs.* 271. 4. and. *ic.* i. 508. 1—*Ger. em.* 680. 4—*Park.* 31—*Dod.* 95. 3—*Lob. obs.* 271. 3. and *ic.* i. 507. 2—*Ger. em.* 680. 3—*Pet.* 31. 7—*Fuchs.* 290—*J. B.* iii. 220—*Trag.* 20. 2—*Lonic.* i. 113. 2—*Matth.* 712.

Very nearly allied to *M. sylvestris*, but smaller and smoother. Blossom purplish red. LINN. Leaves strap-spear-shaped Spikes of flowers much longer than broad. (Stem two or three feet high, upright, smooth, sharply angular, branched, often tinged with purple. Flower-stalks and tube of the calyx perfectly smooth, though the teeth of the latter are not always free from hairiness. Floral-leaves generally ciliated. Flowers of a bright red colour, dotted within. Stamens tipped with red knobs. E.)

Var. 2. Stem red, taller, thicker, and stronger, and divided at the top into more flowering branches. Leaves blacker, shorter, and not so taper-pointed, appearing blunter, more wrinkled, teeth not so fine. Flowers smaller and paler. Scent stronger, and not so agreeable. RAY.—(Teeth of the calyx fringed with hairs. E.)

*Pluk. Mont.* 129.

By the river side at Bocking, Essex. DALE.—On the river Medway, near Maidstone. PLUKENET.—At Babergh, near Norwich. Mr. PITCHFORD.

Var. 3. Narrow-leaved, smooth, with a broader spike; teeth of the calyx fringed with longer and more numerous hairs.

*Bauh. pin.* 227.

In a meadow at Bocking. DALE.

Var 4. Spike smooth; leaves broader; teeth of the calyx fringed with hairs.

This is the *Mentha sativa* of the Pharm. Lond. E.)

*Spear-mint.* Watery places and banks of rivers. Near Exmouth, Devonshire, and on the banks of the Thames. HUDSON.—(By the sides of rills in the vale of Cerig, near Chirk Castle, Denbighshire. Mr. GRIFFITH.—By the side of the Avon between Bath and Kelston, and on a common between Glastonbury and Wells. Mr. SOLE. E.)

P. July—Aug.\*

\* The flavour of this species being more agreeable than that of the others, it is generally preferred for culinary and medical purposes. A conserve of the leaves is very grateful, and the distilled waters, both simple and spirituous, are universally thought pleasant. The leaves are used in spring sallads; and the juice of them, boiled up with sugar, is formed into tablets. The distilled waters, and the essential oil, are often

piperita.

M. (Spikes blunt, interrupted below. E.) Leaves egg-shaped, on leaf-stalks, smoothish: stamens shorter than the blossom; (calyx very smooth at the base.

*Stem* upright, branched, a little hairy, with recurved hairs, often purplish. *Leaves* dark green, sharpish, serrated, smoothish above, more or less hairy, but never downy or shaggy beneath. *Spike* terminal, the lowest whorl remote, stalked, sometimes spiked. *Floral-leaves* spear-shaped, fringed. *Calyx* slender, furrowed, dotted, the teeth dark purple and fringed. *Blossom* purplish.

Var. 1. Leaves egg-spear-shaped; spikes elongated to a point.

*Sole Menth.* 19. t. 7—*Woodv. Med. Bot.* t. 169—*Pet.* t. 31. f. 10—*Blackw.* 291. 2. stamens represented too long.

This is the true *Pepper-mint* of the London Pharmacopœia: first discovered by Dr. Eales in Hertfordshire. In a swampy place on Lansdown, near Bath, called the Wells; also by the side of the Avon in Newton Mead. Mr. SOLE—In a rivulet in Bonsall dale near Matlock. Dr. SMITH.—Near the river at Tamworth.

Var. 2. Leaves egg-shaped; spikes with their points cut off, almost capitate.

*Sole Menth.* 19. t. 8—*E. bot.* 687—*Raii Syn.* t. 10. f. 2.

*Herb Sherrard.* By Wandsworth river. About Bath in various watery places; between Wells and Glastonbury; also in Chiltern bottom, Wilts. Mr. SOLE.

Var. 3. Larger in every respect than the other varieties of this species; leaves broad, almost heart-shaped; spikes long and thick. It varies in degree of hairiness.

given to stop wretchings, and frequently with success. From the circumstances noticed under *M. arvensis*, it has been imagined, that cataplasms and fomentations of Mint, would dissolve coagulations of milk in the breasts; but Dr. Lewis says, that the curd of milk, digested in a strong infusion of Mint, could not be perceived to be any otherwise affected than by common water; however, milk in which Mint leaves were set to macerate did not coagulate nearly so soon as an equal quantity of the same milk kept by itself. Dr. Lewis observes that dry Mint, digested in rectified spirits of wine, gives out a tincture, which appears, by day-light, of a fine dark green, but, by candle-light, of a bright red colour. The fact is, that a small quantity of this tincture is green, either by day-light or by candle-light, but a large quantity of it seems impervious to common day-light; and, when held between the eye and a candle, or between the eye and the sun, it appears red; so that if put into a flat bottle it may shew either green, or red, as it is viewed through the flat side or through the edge of the bottle.

*Sole Menth* 53. t. 24.

At Lyncomb Spa, and other wet places about Bath. Mr. SOLE.—On a little Peninsula at the South West corner of Saham Meer, near Watton, Norfolk. Dr. SMITH.

*Pepper Mint*. *M. piperita*, HUDSON not of LINNÆUS, his plant so named being only a variety of *M. hirsuta*. E.) Watery places and sides of rivulets. P. Aug—Sept.\*

(M. Spikes capitate, very blunt; leaves on short leaf-stalks, heart shaped, naked on both sides; calyx and even the teeth of the calyx smooth. odora'ta.

*E. bot.* 1025—*Sole Menth.* 21. t. 9—*Moris. v.* 3. t. 6. f. 3.

Whole plant invariably smooth, emitting an orange-like scent. Stem about two feet high, 4-sided, of a reddish or mahogany colour, terminating in a large round head of flowers of a light red colour. Leaves broad-heart-shaped, inclining to ovate, serrated; the nerves and under sides sometimes red. Calyx slender, furrowed, covered with glandular dots, dark purple. Stamens shorter than the blossom.

*Orange, or Bergamot Mint*. Not a variety of *M. hirsuta*; and perfectly distinct from *M. aquatica* of Linnæus. In watery places, but not common. Frequent by the sides of rivers and brooks in Cheshire, especially about Aston House. Mrs. WALMSLEY.—On the Milton side of the river, a little below Ditton, Cambridgeshire. RELHAN.—In a brook or ditch near Capel Cerig, between Llanrwst and Llanberis, North Wales. Mr. SOLE.—In a ditch near Bedford. Mr. ABBOT.—Mr. Turner, in *Bot. Guide*, observes that this plant gathered at Reedham, in Norfolk, on the East side of the town near the river, so greatly resembled the *M. hirsuta*, as to be pronounced a variety of that species by Dr. Smith; yet in one year after it was brought into Mr. Wigg's garden it became quite smooth, and assumed the habit, as well as the smell, of *M. odorata*. P. July—Aug. E.)

(2) *Flowers in Whorls.*

(M. Flowers in heads, or in whorls; leaves on leaf-stalks, egg-shaped; calyx covered with hairs; flower-stalks rough with reflexed hairs. hirsu'ta.

\* The stem and leaves are beset with numbers of very minute glands, containing the essential oil, which rises plentifully in distillation. Pepper Mint water is well known as a carminative and anti-spasmodic. The essence of Pepper Mint is an elegant medicine, and possesses the most active properties of the plant.



*E. bot.* 447—*Sole Menth.* 25. t. 11—*Sole Menth.* 23. t. 10—*Ger. em.* 684—*J. B.* iii. 224—*Moris. sect.* 11. t. 7. f. 6—*Riv. Monop. Irr.* t. 49—*Fl. dan.* 638—*Blackw.* 32.

Whole *plant* more or less hairy, often tinged with purple, or a variable scent, generally acrid and aromatic, sometimes like camphor, at others sweet. *Stem* upright, much branched. *Leaves* on foot-stalks, ovate, serrated, of various size. *Floral-leaves* often spear-shaped, hairy. *Calyx* tubular, furrowed, purplish, beset with glandular dots, covered all over with reflected hairs of various lengths. *Blossom* pale purple, hairy on the outside. *Stamens* varying in length. The lower whorls often pedunculated.

Var. 1. of Dr. Smith's arrangement, represented by the above cited figures, comprehends every thing that has been taken for *M. aquatica* and *M. hirsuta* of LINNÆUS—it is likewise the *Origanum vulgare* of Fl. dan; the *M. hirsuta* of HUDS. *E. bot.* WITH. Ed. 4. It varies greatly in colour and hairiness as growing in more moist or dryer situations. *Stamens* longer than the blossom. Flowers capitate.

Var. 2. Nearly resembling the former variety, but of a peculiarly fragrant smell, according to Dillenius.

*R. Syn.* 233. t. 10. f. 1.

In the parish of East Bourne, Sussex, in the road to Pevensey. DILLWYN. Near the mill at Lilleshall, Shropshire; Cornwall. Mr. WATT.

Var. 3. Rather more slender, of a paler hue, and the leaves somewhat less hairy. Flowers in heads. *Stamens* shorter than the blossom. Remarkable for its Pepper-mint flavor. This is the *M. piperita* of LINNÆUS and BERGIUS, cultivated in the North of Europe for Pepper-mint, but distinct from what is generally used in this country.

A native of England. *Herb. Banks.*

Var. 4. Strikingly distinguished by its inflorescence, the capitulum being lengthened out into a leafless spike of several whorls, more or less crowded together. Lowermost whorl generally axillary and pedunculated, sometimes elongated into a little spike. Leaves underneath paler, and considerably hairy. Blossom, as in other Mints, occasionally assuming the shape of a concave or galeated upper-lip. Spiked or capitate.

*M. palustris*, *Sole Menth.* 13. t. 6—*J. B.* iii. 222—*Ger. em.* 685—*Lob. ic.* 510.

Near Bocking. DALE. On the South West shore of Saham meer, Norfolk. Dr. SMITH and Mr. CROWE.—Plentifully in old

itches at Glastonbury, Wedmore, Birtle, &c. Somersetshire.  
SOLE.

Var. 5. Flowers in whorls, but the whorls so close together  
s to resemble a spike. Flowers large, of a pale purple colour;  
stamens just equal with the blossom. Smells like Sweet Mar-  
oram.

*M. paludosa*, *Sole Menth.* 49. t. 22.

In Holt fen at Streatham, near Ely; in a river by the side of  
dry Causeway, near Hadingham in the Isle of Ely. Mr. SOLE.

Var. 6. Flowers in axillary clusters from many of the upper-  
most leaves, forming whorls, each cluster is more or less pedun-  
culated. Length of the stamens variable.

*E. bot. t.* 448.

*M. sativa*. LINN. (synonyms excepted.) HUDS. *E. bot. M.*  
*ivialis*, var. SOLE. 45. *M. arvensis*. var. 2. WITH. Ed. 4.  
about rivulets on the side of Shotover Hill near Oxford. Mr. T.  
BOBART.—On the banks of the river Lea near Hackney. Mr. E.  
FORSTER.—At Saham and Ashill in Norfolk; also eleven miles  
from Norwich in the Hingham road, and in many other places.  
Dr. SMITH.

Var. 7. Verticillate, less hairy, and with rounder leaves.  
DILL. in *Herb. Sherard*.

In a ditch on the left hand of Chalk's Green, going from  
Baintree to Lee House. DILLWYN.

Var. 8. Whorled, very small, with an extremely fragrant  
dour. *Herb. Buddl. M. aquatica exigua*. DILL. in R. Syn. 232.  
by the side of the New River, near the upper end of Stoke  
Newington. *Herb. Sherard*. On Skoulton Common, near Hing-  
ham, Norfolk. Dr. SMITH.

*Hairy Mint.* P. Aug.—Sept. E.)

M. Flowers in whorls; leaves egg-spear-shaped, pointed acutifolia.  
at both ends; calyx covered with hairs; those of the  
fruit-stalks horizontal.

This plant very much resembles the preceding species, but  
rarely found. The leaves are narrower, more pointed at each  
end, and more unequally serrated. Whorls altogether sessile.

*Fragrant Sharp-leaved Mint.* Banks of rivers, or streamlets.  
On the river Medway. RAND. Between Rochester and Chat-  
am. MILLER. Mr. GRIFFITH of Garn shewed me this newly  
ascertained species growing in a wet ditch on the right hand side  
of the road from Whitechurch to Denbigh, in the autumn of  
310. P. Sept. E.)

(ru'bra.

*M.* Whorled; leaves egg-shaped; stem upright, zig-zag; fruit-stalks and calyx perfectly smooth; teeth of the calyx only hairy.

*Sole Menth. t.* 21—*E. bot.* 1413—*Hort. Eyst. Æst. ord.* 7. *t.* 5.  
*f.* 1—*Moris. sect.* 11. *t.* 7. *f.* 2—*J. B.* iii. 2. 215—*Dod. Pempt.*  
 95—*Ger. em.* 680—*Lob. ic.* 507.

This species appears to have been unknown to Linnæus. It is distinguishable by its *stem* being smooth, reddish, zig-zag, with a very few short branches curved in various directions; rising to the height of 5 or 6 feet when supported by bushes; *leaves* deep-green, shining, nearly smooth; *blossoms* large, purple. Less liable to variations than many other Mints.

Var. 1. *M. pratensis*. *SOLE*. Stem branched only towards the top, changing from pale green to dark brown; leaves harsh, wrinkled, hairy, deeply serrated, hanging down close to the stem.

*Sole. t.* 17.

Wet places in the New Forest, Alderbury Common, near the Roe-buck, between Salisbury and Romsey. Mr. *SOLE*. P. Aug.

*Tall Red Mint. M. sativa. SOLE*. In ditches and by the sides of rivers.—By Hackney river at the ferry-house. *Herb. Sherard*: the house remains, though no ferry since the building of Lea bridge.—Peckham fields. *DILLWYN*.—North Wales; also in various waters in Coalbrook Dale, and in a wet place between Kidderminster and Bridgnorth. Mr. *SOLE*.—By the road side between Edmonton and Enfield; also near Walthamstow. Mr. *E. FORSTER*.—Under a wet hedge in the road from Watton to Saham church, Norfolk. Dr. *SMITH*.

P. Sept. E.)

(gentilis.

*M.* Whorled; leaves egg-shaped; stem very much branched and spreading; base of the calyx, and fruit-stalks smooth.

*Sole Menth. t.* 18—*E. bot.* 2118.

Herb about a foot and a half high, slightly hairy; when growing in dry ground gratefully aromatic. *Stem* upright, of a deep red colour, herbaceous, nearly smooth; *leaves* on short foot-stalks, ovate, serrated, roundish, pointed, light green, having short scattered hairs on both sides; veins reddish or whitish. *Foot-stalks* cylindrical, purple, often perfectly smooth. *Blossoms* pale purple; *stamens* shorter than the blossom.

Var. 1. Leaves longer, nearly elliptical; stems three feet high, rough.

*Sole Menth. t.* 20.

In Lock's Brook between Weston and Tiverton, Somersetshire. Mr. SOLE.

Var. 2. Leaves variegated with yellow or white; whorls sometimes elevated on foot-stalks half an inch long; and these, though very rarely, slightly hairy.

*Sole Menth. t. 19—Moris. sect. 11. t. 7. f. 5.*

*Variegated Mint. M. variegata.* SOLE. Common in gardens and about cottages, but scarcely to be found truly wild.

*Bushy Red Mint. M. gentilis.* LINN. *M. rubra.* SOLE. About several villages in Shropshire. Rev. Mr. WILLIAMS. In pools and brooks between Mole and Llanrwst, North Wales. Mr. SOLE. In a ditch at Stroud's Green, near Hornsey. Reporter in *Month. Mag.* P. Aug. E.)

(*M.* Flowers whorled; leaves spear-shaped, nearly sessile; *gracilis.* stem upright, very much branched; flower-stalks perfectly smooth; teeth of the calyx hairy.

*Sole Menth. t. 16—E. bot. 449.*

Plant but slightly hairy; eighteen inches high; has no smell of Basil. *Leaves* sharp-pointed, serrated, narrowed at the base, sprinkled on both sides with short hairs, pale green. E.) *Stems* with more or less of a reddish tinge towards the top. *Leaf-stalks* flat, short. *Whirls* composed of 2 lateral umbels on very short fruit-stalks. *Floral-leaves* 4 or 5 under each whirl, 2 spear-shaped, the rest smaller and strap-shaped. *Calyx* slightly ribbed, coloured, sprinkled with shining dots. *Blossom* with white hairs on the outside, and within the tube. *Stamens* all of the same length, shorter than the blossom. *Style* half as long again as the blossom, falling off. *Germens* 4, on a yellowish green fleshy receptacle. *Blossom* pale red, (bearded at the point. E.)

(Var. 2. Stem upright, almost smooth, two feet high, dark brown. Leaves smooth, long, narrow, deep green; lower ones on short foot-stalks, upper ones sessile; smelling strongly of Basil.

*Sole Menth. t. 15—Moris. sect. 11. t. 7. f. 1—Ger. em. 680.*

*M. gentilis.* SOLE. *M. cardiaca.* GER. em. Frequent in ditches near towns and villages, but scarcely wild.

*Narrow-leaved Mint. M. gracilis.* SOLE. *M. gentilis.* E. bot. WITH. Ed. 4. *M. rubra.* HUDS. In moist meadows and watery places. At Bocking and Stoke Newington. *Herb. Sherard.* Near Walthamstow. Mr. B. M. FORSTER. Near Brad-



DIDYNAMIA. GYMNOSPERMIA. *Mentha*.

ford, Wilts. Mr. SOLE. At Saham, and Oxborough, Norfolk.  
Dr. SMITH. P. Aug. E.)

(arven'sis. *M.* Flowers in whorls; leaves egg-shaped; stem much branched; calyx bell-shaped, rough with horizontal hairs.

*Sole Menth.* 29. t. 12—*E. bot.* 2119—*Kniph.* 11—*Fl. dan.* 512—*Fuchs.* 435—*Trag.* 16. 2—*Moris. sect.* 11. t. 7. f. 5.

*Plant* pale green, more or less downy; *stem* diffusely branched; *odour* strong, resembling that from blue mouldy cheese. *Calyx* short, and campanulate, clothed with long projecting hairs. These marks sufficiently distinguish this species.

*Corn Mint.* *M. arvensis* of LINNÆUS, and most other authors. In the borders or between the furrows of cornfields, especially in moist places. P. June—Sept.

Var. 2. Flowers earlier, has a more shining surface, though slightly hairy. Leaves more recurved, and elliptical; stem upright.

*M. præcox*, *Sole* 31. t. 13.

In moist meadows. By the side of the Avon, near Bath, flowering about the middle of June. Mr. SOLE.

Var. 3. Leaves shorter and broader, smelling like Sweet Basil.

*M. gentilis.* MILLER. On the right hand of the road from Bocking to Gossfield. DALE. At Shelford, Cambridgeshire. Mr. WIGMORES. *Ray?* At Prestwick Car, Northumberland. Mr. WINCH.

Var. 4. Leaves very broad, almost heart-shaped, marked with strong parrallel veins which render them rugose. Stem upright.

*M. agrestis*, *Sole Menth.* 33. t. 14.

Common in cornfields and neglected gardens about Mendip hills, Shepton Mallet, and Frome. Mr. SOLE. E.)

*Pulegium*, (*M.* Flowers whorled; leaves egg-shaped; stem prostrate; flower-stalks and calyx downy all over; the teeth fringed, E.)

*E. bot.* 1026—*Sole Menth.* 51, t. 23—*Ludw.* 195—*Blackw.* 302—*Riv.* 23. 1. *Pulegium*—*Woodv.* 171—*Fuchs.* 198—*J. B.* iii. 256, 2—*Trag.* 23—*Matth.* 704—*Dod.* 282—*Lob. obs.* 266. and

*ic.* i. 500. 1-*Ger. em.* 671. 1-*Pet.* 32. 2-*Park.* 29-*Lonic.* i. 114. 3-*H. ox.* xi. 7. row 2. 1.

(Far less than the preceding species. *E.*) *Stems* with 4 blunt corners, hairy, branched. *Leaves* small, thick, slightly toothed, underneath set with deep semi-transparent dots. *Blossom* twice as long as the calyx, very hairy without. *Stamens* equal. *Pistils* as long as the stamens. *Blossom* pale purple.

(It varies sometimes with a white flower. *E.*)

*Penny-royal Mint. Pulegium.* Pharm. Lond. Moist heaths and pastures. [Side of a pool at Robert's End, near Hanley Castle, Worcestershire. Mr. BALLARD. Side of a pool at Erdington, Warwickshire. P. Aug.—Sept.\*

GLECO'MA. *Cal.* 5-cleft: *anthers* in pairs, each pair forming a cross.

G. *Leaves* kidney-shaped, scolloped.

*Hedera'cea.*

*E. bot.* 853-*Ludw.* 62-*Vaill.* 6. 5, and 6-*Curt.* 143-*Woodv.* 28-*Fl. dan.* 789-*Riv. mon.* 67. 2, *H. minor*-*Lonic.* i. 205. 2-*Matth.* 626-*Dod.* 394-*Lob. obs.* 336. 2. and *ic.* i. 613. 2-*Ger. em.* 856. 1-*Park.* 677. h-*Walc.*-*J. B.* ii. 855. 2-*Ger.* 705-*Fuchs.* 876-*Blackw.* 225-*Trag.* 799.

The *stamens* are sometimes imperfect, consisting of filaments only half the usual length, and terminated by a reddish blunt point; sometimes they are furnished with anthers, pale brown, containing no pollen, and scarcely broader than the filaments. *St. Roots* sending out trailing suckers. *Leaves* heart-kidney or heart-shaped, beset underneath with hollow dots, in which are glands secreting an essential oil, and above with little eminences, but which do not secrete any odoriferous oil, for this surface being rubbed gives out no peculiar scent, whereas the under surface affords a pleasant reviving odour. *Blossom* blue; sometimes, though rarely flesh-colour.

Var. 2. more upright and more hairy.

*Riv. mon.* 67. 1, *Hedera terrestris*-*Vaill.* 6. 5-*Clus.* ii. 38. 2-*Ger. em.* 704. 6-*Park.* 677. a.

[Near Worcester. St.]

\* The expressed juice, with a little sugar, is not an inefficacious medicine in the whooping cough. A simple and spirituous water, distilled from the dried leaves, are kept in the shops. They are prescribed in hysterical affections, and are not without considerable anti-spasmodic properties. An infusion of the plant may be used with the same intention. *Musca pipiens*; *Cassida viridis*, *Phalana Chrysis* live upon the different species.

*Gill. Ground Ivy. Ale-hoof.* Groves, hedges, and shady places. P. April—May.\*

**LA'MIUM.** *Bloss.* upper lip entire, vaulted; lower lip inversely heart-shaped: mouth with a bristle-shaped tooth on each side.

**album.** L. Leaves heart-shaped, tapering to a point, serrated, on leaf-stalks; flowers about 20 in a whirl.

*E. bot.* 768—*Ludw.* 162—*Curt.* 115—*Kniph.* 3—*Riv. mon.* 62. 1—*Fl. dan.* 594—*Blackw.* 33—*Walc.—Trag.* 8. 1—*Ger.* 566—*Matth.* 1129—*Dod.* 153. 1—*Lob.* 280. 2. and *ic.* i. 520. 2—*Ger. em.* 702. 1—*Park.* 605. 3.

(Stems upright. Leaves slightly hairy. E.) Flowers white, sometimes, though rarely, with a pinky tinge; 12 to 20 in a whirl. Anthers hairy, black.

*White Archangel. White Dead-Nettle.* On rubbish, in corn-fields, and on ditch banks. P. May—June.

**purpu'reum.** L. Leaves heart-shaped, blunt, on leaf-stalks; (upper ones crowded together. *Fl. Brit. E.*)

*E. bot.* 769—*Curt.—Sheldr.* 69—*Fl. dan.* 523—*Blackw.* 182. 1—*Kniph.* 3—*Riv. mon.* 62. 2, *Galeopsis minor*—*Ger.* 568. 4—*Walc.—Dod.* 153. 2—*Lob. obs.* 280. 1. and *ic.* i. 120. 1—*Ger. em.* 703. 3—*Park.* 605. 1. and 587. 11—*H. or.* xi. 11. 9.

(Stems smooth, branched at the bottom, naked about the middle, thickly set with leaves at the top. E.) Flowers six in the bosom of each leaf, in a double row. Calyx awned, fringed. LYONS. Leaves serrated, downy, but not rough; the ends often with a purplish tinge, and mostly pointing downwards. Blossom lower border of the mouth whitish, with purple streaks, the rest pale red; sometimes nearly white.

\* The leaves thrown into the vat with ale, clarify it and give it a flavour. (It was generally used for this purpose till the reign of Henry the Eighth, about which period Hops were substituted. E.) Ale thus prepared is often drank as an antiscorbutic. An infusion of the leaves is commonly taken as tea, and proves slightly tonic, expectorant, and aperient. The expressed juice, mixed with a little wine, and applied morning and evening, destroys the white specks upon horses' eyes. The plants that grow near it do not flourish.—It is said to be hurtful to horses if they eat much of it. Sheep eat it; horses are not fond of it; cows, goats, and swine refuse it. Little protuberances, composed of many cells, are sometimes found upon the leaves, and are occasioned by insects. The *Phalana libatrix* and the *Cynips Gledomæ* live upon it. LINN.

*Red Dead Nettle*, or *Archangel*. *Dee Nettle*. Rubbish, cornfields, and kitchen gardens. A. April—Sept.

L. Leaves deeply and irregularly cut, stem-leaves extending down the leaf-stalks. *incisum*.

*E. bot.* 1933—*Pet.* 33. 3—*Pluk.* 41. 3.

*Leaves* deeply cut, so as almost to be lobed, tapering down into leaf-stalks. Mr. WOODWARD. Mr. Woodward suspecting this might be distinct from the *L. purpureum*, wished it to be cultivated in order to ascertain that point. Mr. Robson, with this view, introduced it into his garden, where it has shed its seed, and propagated itself three or four times, and all the plants have been of the same kind. It flowers and ripens its seeds, and these seeds produce others twice in the summer. He further observes, that both sorts are common about Darlington, often growing together, we may therefore conclude that the difference is not owing to soil and situation.

*Cut-leaved Archangel*. *Lamium rubrum minus foliis profunde incis.* RAY Syn. 240. *L. purpureum* β. HUDS. Bot. arr. Ed. ii. Fl. Brit. *L. incisum*. WILLD. E. bot. *L. dissectum*. WITH. Ed. 3 and 4. HULL. Sym. Kitchen gardens and fallow fields, not unfrequent. On a bank between Pimlico and Chelsea. CURTIS.—(in cornfields, near Bungay, frequent. Mr. WOODWARD.—In great plenty at Hunington, Suffolk; also in a field of tares at Pakenham. Rev. G. R. LEATHES. E.) A. April—Sept.\*

L. Floral-leaves sessile, embracing the stem, blunt.

amplexicaule.

*E. bot.* 770—*Curt.* 109—*Kniph.* 11—*Riv. mon.* 63. 1 and 2—*Fl. dan.* 752—*Lob. ic.* i. 463. 2—*Ger em.* 616. 4—*Park.* 762. 2—*Pet.* 33. 4—*H. or.* xi. 11. 12—*Ger.* 493. 4.

*Flowers* of two kinds, the first expanding in February and March, only a little longer than the calyx, the latter opening in May and June, four times as long as the calyx, all containing stamens and pistils. CURTIS. *Lower-leaves* on leaf-stalks, heart-shaped, blunt, deeply and bluntly serrated, the *upper* in opposite pairs, heart-shaped broad, sitting, inclosing but not embracing the stem, with five lobes; lobes scalloped, the middle one as broad again, and with three clefts at the end, the lateral ones small. *Blossom* purple. Mr. WOODWARD. (*Calyx* thickly set with hairs. E.)

\* The young leaves both of this and the preceding species may be eaten with other pot-herbs. Goats, sheep, and horses eat it; cows refuse it.



*Great Henbit. Henbit Archangel. Pollichia amplexicaulis.*  
GMELIN. Sandy cornfields, and cultivated ground.

A. Feb.—June.

**GALEOP'SIS.** *Bloss.* upper lip vaulted, somewhat scolloped: lower lip 3-cleft: mouth with a concave taper-pointed tooth on each side.

La'danum. G. All the whirls remote; calyxes bell-shaped, pubescent: teeth longer, strap-bristle-shaped, diverging.

*E. bot.* 834—*Kniph.* 12—*Riv. mon.* 24. 1—*Pet.* 33. 11.

*Stem*, knots scarce sensibly swoln. *Calyx* teeth hardly to be called thorny or pungent. *Blossom* helmet keeled. LINN. *Stem* upright, 4-cornered, somewhat hairy, with spreading branches. *Leaves* opposite, on leaf-stalks, sometimes spear-shaped, serrated, and sometimes very entire; taper-pointed, naked, or somewhat hairy, with three or four serratures on each edge. *Flowers* red, slightly woolly. *Blossom* helmet toothed; *lips* scolloped, the middlemost segment red and white. *Calyx* teeth taper-pointed, or thorny. HUDSON. (The Rev. Mr. Forby has found the terminal flower sometimes regularly 4-cleft as in *G. Tetrahit*, and in Norfolk a variety with narrower and almost entire leaves almost frequent. *E. bot.* E.)

*Red Hemp Nettle.* Cornfields in a calcareous soil, frequent.

A. June—Aug.

Var. 2. *Calyx* woolly.

*Stems* branched, thickest upward. *Leaves* entire, or distantly toothed, mostly pointing downwards. *Calyx* very hairy at the edges, and on the outside; teeth terminated by awns as long as the teeth. *Blossoms* reddish purple; *upper lip* oval, hairy without; *lower lip* bent back, irregularly scolloped, with two oval yellow spots; teeth not observable. I suspect this will prove a different species, at least it differs from the preceding in three very striking circumstances, viz. the stem thickening upwards, the great woolliness of the calyx, and the blossoms being larger though shorter.

[At the foot of Scoot Scar near Kendal, and Giggleswick Scar, near Settle. Mr. GOUGH.]—In a cornfield two miles west of Stratford upon Avon, near a limestone quarry.

A. Sept.

*grandiflora.* G. All the whirls remote; calyxes tubular, very hairy; teeth spear-shaped, taper-pointed, short, straight.

*Dicks. h. s.*—*E. bot.* 2353—*Riv. mon.* 24. 2—*Pët.* 33. 10.

*Stem* upright, 4-cornered, of equal thickness between each joint; branching, woolly. *Leaves* serrated, woolly, or silky, on leaf-stalks, opposite; those near the root egg-shaped, those of the stem spear-shaped, taper-pointed, with straight veins. *Calyx* teeth thorny. *Blossom* yellow, woolly; helmet toothed; lips scolloped. In habit it agrees with the *G. Ladanum*, but differs in breadth, serratures, veins and soft hairs of the leaves, and in the colour of the blossoms. HUDSON. The hairs on the calyxes in this species are straight and glandular, but in the preceding white, and curled like wool or cotton. (*Blossom* four times as long as the calyx, of a pale sulphur colour, the palate deep yellow. *E. bot.* E.)

*Large-flowered, or Downy Hemp Nettle. G. villosa.* HUDS. Fl. Brit. *G. grandiflora.* GMELIN. Sandy cornfields, Yorkshire and Lancashire. Near Newark, and about Bangor.

A. July—Aug.

G. Upper whirls nearly contiguous; calyx bellying, teeth very long, bristle-shaped, equal; stem swollen below the joints. Te'trahit.

*Riv. mon.* 31, *cannab. spur.*—*E. bot.* 207—*Kniph.* 8—*Dod.* 153. 4—*Lob. ic.* i. 527. 2—*Ger. em.* 709. 2. *a-Ger. em.* 709. 1—*Ger.* 573—*Pët.* 33. 8.

*Knots* swoln. *Calyx* teeth thorny. *Blossom* helmet scolloped. LINN. *Blossom* generally purple, sometimes white. RAY. *Calyx* teeth terminated by sharp awns as long again as those of *G. Ladanum*. Mr. WOODWARD. *Blossom* nearly three fourths of an inch long. (*Stem* covered with strong bristles. E.)

Var. 2. Blossoms white, and much larger than those of 1.

*Cannabis spuria flore albo magno eleganti.* R. Syn. 240.

Var. 3. Terminating flower salver-shaped.

Found by Dr. Smith at Matlock in 1788. The terminating flowers were always regularly 4-cleft, and salver-shaped, with four equal stamens, while all the rest had their proper form. See *E. bot.* 207.

In all these varieties the leaves are egg-spear-shaped, and only the upper parts of the stem and branches are hairy.

*Common Hemp Nettle. Nettle Hemp Allheal.* Hedge banks, borders of cornfields, and amongst rubbish.

A. July—Aug.

G. Upper whirls nearly contiguous; calyx tubular, shorter canna'bina. teeth strap-shaped, unequal, 3 of them larger.

*Curt.*—*E. bot.* 667—*Riv. mon.* 32, *Cannab. spur. fl. maj.*—*Fl. dan.* 929—*Barr. ic.* 1158—*Lob. ic. i.* 527. 3—*Ger. em.* 709 2. 6—*Park.* 599. 1—*Pluk* 41. 4.

The specific character will hardly distinguish this from the *G. Tetrahit*, but an attention to the following circumstances will do it. *Stem* and branches very hairy in every part. *Leaves* paler green and more hairy underneath. *Calyx* purplish red. *Blossom* about one inch long, pale yellow; lower lip deeper yellow, its middle segment purple. The seeds produced similar plants year after year, and the beauty of its blossoms might challenge a place in the flower garden. *G. Tetrahit*, *γ.* *Fl. Lapp.* and *Succ. 3.* HUDS. *RAY* *Syn.* 241. 9. *G. versicolor.* *CURT. Fl. Brit.*

It varies in having the leaves broad and egg-spear-shaped; or narrower and spear-shaped.

*Bee Nettle.* Hedges at Kirkby in Furness, and in fallow ground near Hutton Roof, Westmoreland. Mr. ATKINSON. (Plentiful near Norwich, and at Watlington, Norfolk; also about Moffat and near Edinburgh. Dr. SMITH. Observed by Sir T. G. CULLUM at Gretna Green very abundant. At Ashill, Norfolk. Rev. Mr. WATTS. *Fl. Brit. E.*) Moist cornfields in a gravelly soil, and under a moist hedge at Birches Green near Birmingham.

A. July—Aug.

**GALEOB'DOLON.** *Bloss.* upper lip entire vaulted; lower lip without teeth, 3-cleft; segments broad, pointed: *anthers* fleshy on the back.

utrum.

G. (HUDS.)

*Curt.* 223; *Galeobdolon Galeopsis*—*E. bot.* 787—*Walc.*—*Dod.* 153. 3—*Lob. ic. i.* 521. 1—*Ger. em.* 702. 2—*Park.* 606—*H. ox.* xi. 11. 5—*Pet.* 33. 6—*Riv. mon.* 20. 2, *Lam. fl. lut.*—*Kniph.* 3—*Ger.* 567. 2—*J. B.* iii. 323. 1.

*Lower leaves* heart-shaped; the upper egg-shaped, pointed. *Flowers* in whirls, sitting, 6 to 12 in a whirl. *Whirls* with an involucre. *Blossom* yellow; middle segment of the lower lip tawny, marked with 3 lines. HUDSON. *Floral-leaves* bristle-shaped, one at the base of each flower. *Blossom* lower lip beautifully striped and spotted with deep orange. Mr. WOODWARD. *Stems* 4-cornered, furrowed. *Leaves* spear-shaped, on leaf-stalks, unequally serrated, hairy, especially at the edges. *Whirls*, the uppermost with six flowers, the rest with from seven to ten. *Involucre* leaves growing to the base of the calyxes. *Anthers*

fleshy or glandular on the back part. *Seeds* oblong, convex on the outer side, 3-cornered on the inner.

*Yellow Archangel. Yellow Dead Nettle. Galeopsis Galeobdolon.* LINN. *Pollichia Galeobdolon.* GMELIN, who includes under his genus *Pollichia* the *Lamium amplexicaule*, but that has teeth on the side of the blossom, and the name *Pollichia* had before been given to another plant. See Hort. Kew. and Schreber. Woods, shady places, and moist hedges. [Bath Hills, near Buntingford, Suffolk; and woods, Norfolk. Mr. WOODWARD.—Hedges near Malvern Chase. Mr. BALLARD.—Woods near Worcester. ST.—Staffordshire and Warwickshire, frequent.] P. May.

(Sir. T. G. CULLUM mentions, in *Bot. Guide*, a curious and elegant variety with the blossom, or at least the terminal flower, flat, and six-cloven, growing for many years in a lane near the Grove at Hardwick, a mile and a half from Bury. E.)

**BETO'NICA.** *Calyx* awned: *bloss.* upper lip upright, flat: tube cylindrical.

3. Spike interrupted: blossom upper lip entire, lower lip *officinalis*. the middle segment notched: calyxes nearly smooth.

*Ludw.* 2—*Curt.* 154—*Kniph.* 5, and 11—*E. bot.* 1142—*Riv. mon.* 28, *Betonica*.—*Woodv.* 244—*Walc.* 5—*Ger.* 577. 1—*Blackw.* 46—*Sheldr.* 36—*Fl. dan.* 726—*Lonic.* i. 138. 1—*Tourn.* 96—*Clus.* ii. 39. 1—*Dod.* 40. 1—*Lob. obs.* 286. 4, and *ic.* i. 532. 2—*Ger. em.* 714—*Park.* 614. 1—*H. ox.* xi. 5. row 1. 1. f. 1—*Pet.* 32. 6—*Fuchs.* 351—*Trag.* 198—*J. B.* 301—*Matth.* 944—*Ger.* 577. 2.

*Stems* square, hairy. *Root-leaves* oblong-heart-shaped, scoloped, hairy, on long leaf-stalks. *Stem-leaves* distant, spear-shaped, serrated. Mr. WOODWARD. *Stem-leaves* more strap than spear-shaped. *Hairs* on the stem laid flat and pointing downwards. *Blossom* purple, (or dull rose-colour, downy. E.)

Var. 2. White flowered.

*Wood Betony.* Woods and shady groves. [Plentiful about Manchester, both in shady and exposed places. Mr. CALEY. Meadows in St. Faith's, near Norwich. Mr. CROWE. Ripton, Huntingdonshire. Pastures, Herts. Mr. WOODWARD.]

P. July—Aug.\*

\* This plant was formerly much used in medicine, but it is discarded from modern practice; however, it is not destitute of virtues, for when fresh it intoxicates, and the dried leaves excite sneezing. It is often smoked as tobacco. The root provokes vomiting. Sheep eat it. Goats refuse it.



**STA'CHYS.** *Bloss.* upper lip vaulted: lower lip bent back at the sides, the larger middle segment notched: *stamens* after shedding the pollen bent to the sides.

*sylvatica.* S. Six flowers in a whirl; leaves heart-shaped, on leaf-stalks.

*Curt.* 183-*E. bot.* 416-*Fl. dan.* 1102-*Riv. mon.* 26. 2, *Stachys sylvatica.*-*Blackw.* 84. 2-*Clus.* ii. 36. 1-*Ger. em.* 704. 5-*Park.* 908. 1-*H. or. xi.* 11. 10-*Pet.* 32. 7-*Trag.* 5-*Lonic.* i. 109. 3-*Blackw.* 84. 1.

(*Stems* undivided, two feet high. *Spike* interrupted, leafy at the base, bearing floral-leaves towards the top. *Fl. Brit. E.*) *Stem, leaves and calyx* hairy. *Floral-leaves* spear-shaped, pointed. *Blossoms* deep purple with white spots. Mr. WOODWARD. *Tube* of the blossom much longer than the calyx.

Var. 2. *Leaves* angular.

*Hedge Nettle Woundwort.* Hedges and woods.

P. July—Aug.\*

Var. 2. *Huds.* Smaller. *Leaves* angular.

*palus'tris.* S. About 6 flowers in a whirl; leaves strap-spear-shaped, half embracing the stem, sessile.

*Curt.* 208-*E. bot.* 1675-*Fl. dan.* 1103-*Kniph.* 7-*Riv. mon.* 26. 1, *Stachys palustris.*-*Sheldr.* 45-*Ger.* 565. 2-*Ger. em.* 1005-*Blackw.* 273-*Ger.* 852-*Park.* 852-*Pet.* 33. 9.

*Whirls* with 6 to 10 flowers. LINN. *Stems* 4-cornered, rough with hairs pointing downwards. *Leaves* in opposite pairs, very soft, unequally serrated, spreading half way round the stem. *Floral-leaves*, two small ones under each whirl. *Calyx* purple, beset with fine hairs terminating in small globules. *Blossom* reddish purple, mottled; tube white; mouth compressed; upper lip, and all the segments of the lower lip, slightly notched at the end. (*Spike* long and dense. E.)

*All-heal.* Marsh Woundwort. Watery places and banks of rivers.

P. Aug.

\* It will dye yellow. The whole plant has a fetid smell, and toads are thought to be fond of living under its shade. Sheep and goats eat it. Horses, cows, and swine refuse it.

3. Six flowers in a whirl; leaves blunt, almost naked; arven'sis. blossoms as long as the calyx; stem feeble.

*Curt.* 246—*E. bot.* 1154—*Fl. dan.* 587—*Riv. mon.* 27. 2, *Stackys arv. min.*—*Pet.* 33. 12.

*Stem* 4-cornered, blunt, with spreading branches; rough with hair. *Leaves* heart-shaped, bluntly serrated, much less hairy than the stem. *Leaf-stalks* hairy. *Cups* sitting, hairy, with five equal, sharp-pointed, shallow clefts. *Blossom* whitish, almost smaller than the cup; helmet very entire; lip with 3 clefts, the middle one the broadest, purplish, dotted; not nicked. LINN. *Blossoms* flesh-coloured. HALL. It neither possesses the striking character of any other genus, nor sufficient marks of distinction to form a genus by itself. CURTIS. *Tube* of the blossom not longer than the calyx.

*Corn Woundwort.* In cornfields. [Thorp Arch, Yorkshire. Rev. Mr. PIERSON. On St. Vincent's Rocks, Bristol.]

A. June—Aug.

Σ Many flowers in a whirl; serratures of the leaves lapping over each other; stem cottony. Germanica.

*Jacq. austr.* 319—*Kniph.* 10—*E. bot.* 829—*Riv. mon.* 27. 1, *Stackys mont.*—*Fl. dan.* 684—*Barr. ic.* 297—*Fuchs.* 766—*J. B.* iii. 320—*Trag.* 9. 1—*Lonic.* i. 110. 1—ii. 30. 4—*Ger.* 563. 2—*Matth.* 830—*Dod.* 90. 3—*Lob. obs.* 285. 4. and *ic.* i. 530. 2—*Ger. em.* 695. 2—*Park.* 48. 2—*H. ox.* xi. 10. 1.

Whole *plant* white with a thick silky down. *Lower-leaves* heart-spear-shaped; the *upper* spear-shaped, thick wrinkled, sharply serrated. *Blossom*, lip covered with down. Mr. WOODWARD. *Leaves* very thick, soft and cloth-like. *Blossom* purplish red.

*Downy Woundwort. German Woundwort.* Hedges about Witney Park, Oxfordshire, plentifully, and four miles South of Grantham, near the London road, opposite Easton. [Frequent in Oxfordshire. Mr. NEWBERRY.—Between Blenheim and Ditchley. Mr. WOODWARD.]—(Pinxton, Derbyshire. Mr. COKE, in *Bot. Guide.* E.) P. July.

BALLO'TA. *Calyx* salver-shaped, with 5 teeth and 10 scores: *bloss.* upper lip concave, scalloped.

nigra.

B. Leaves heart-shaped, undivided, serrated; calyx teeth tapering to a point.

*Kniph.* 6—*Blackw.* 136—*E. bot.* 46—*Fuchs.* 154—*J. B.* iii. 318. 1—*Riv. mon.* 65. 1, *Marrubiastr.*—*Matth.* 825—*Clus.* ii. 34. 1—*Dod.* 90. 1—*Lob. obs.* 279. 1, and *ic.* i. 518. 2—*Ger. em.* 701. 1—*Park.* 1230. 3—*H. ox.* xi. 9. 14—*Pet.* 32. 4.

(Whole plant pubescent, with a pungent, acrid odour. Stem 2 or 3 feet high, upright, branched, with hairs bent back. E.) Lower leaves heart-shaped, upper ones egg-shaped. Floral-leaves bristle-shaped, hairy. Whirls extending half way round the stem. Calyx hairy, rim 5-cornered; teeth ending in sharp bristle-shaped points. Blossom tube containing honey, closed above by five hairy tufts; upper lip hairy, not very entire, purple, variegated with white lines. The cups attaining their full size long before the blossoms expand, the latter appear as if already fallen off, though, on examination, they will be found at the bottom of the cup.

*Stinking Horehound*, or *Henbit*. On rubbish and in hedges, common. P. July—Aug.\*

Var. 2. Blossoms white, with a tinge of red. *B. alba* of LINN.

[Near Hammersmith, on the road side. WOODWARD. Norwich. Mr. CROWE, and Stafford. St.]

MARRUBIUM. Calyx salver-shaped, rigid, with 10 scores: *bloss.* upper lip cloven, strap-shaped, straight.

vulga're.

M. Teeth of the calyx ten, bristle-shaped, hooked.

*E. bot.* 410—*Fl. dan.* 1036—*Ludw.* 145—*Riv. mon.* 66. 1, *Marrubium alb.*—*Blackw.* 479—*Ger.* 561. 1—*Fuchs.* 590—*J. B.* iii. 316—*Matth.* 828—*Lonic.* i. 110. 2—*Trag.* 8. 2.—*Clus.* ii. 34. 1—*Dod.* 87. 1—*Lob. obs.* 278. 3, and *ic.* i. 517. 2—*Ger. em.* 693. 1—*Park.* 44—*Pet.* 32. 3—*H. ox.* xi. 9. row. 3. 1.

Whole plant white with down. Lower-leaves roundish, wrinkled, with thick veins beneath; upper-leaves somewhat egg-shaped. Mr. WOODWARD. Leaves wrinkled, hoary. Calyx

\* It stands recommended in hysterical cases. The Swedes reckon it almost an universal remedy in the diseases of their cattle. Horses, cows, sheep, and goats refuse it.

woolly, fringed on the inside at the bottom of the teeth with woolly hairs. *Blossom* compressed, bowed; upper lip spear-shaped; lower lip, middle segment slightly scalloped, lateral segments spear-shaped; short. *Anthers* with a black substance in the middle. *Blossom* white.

*White Horehound*. Road sides and amongst rubbish.

P. July—Sept.\*

**LEONU'RUS.** *Anthers* sprinkled with shining particles.

L. Stem-leaves spear-shaped, 3-lobed.

Cardi'aca.

*Kniph.* 4—*Ludw.* 5—*Fl. dan.* 727—*Riv. mon.* 20. 1, *Cardiaca*.  
—*Blackw.* 171—*E. bot.* 286—*Dod.* 94—*Lob. obs.* 278. 1,  
and *ic.* i. 516. 1—*Ger. em.* 705—*Park.* 42. 7—*Ger.* 569—  
*Fuchs.* 395—*Lonic.* i. 110. 3—*H. ox.* xi. 9. 18.

(*Stem* two or three feet high, coloured, downy. *Leaves* numerous, on leaf-stalks, woolly and veined underneath: the uppermost nearly entire. *Whirls* with many flowers. *Fl. Brit.* E.) *Flowers* in whirls, purplish within, white and downy on the outsides. *Anthers* brown, partly covered on the outer side with white opaque globules which look like enamel, but are not of a bony hardness.

*Motherwort*. Hedges, and on rubbish and dunghills. (Between Tickhill and Worksop. HUDSON. In a lane near Combe Wood, Surrey. Mr. SOWERBY. E.) [Ditchingham, Norfolk, in a hedge, and on an adjoining bank, in a gravelly soil. Mr. WOODWARD.] B. LINN. and HUDS.—P. RELH. and SMITH.  
June—Aug.†

**CLINOPO'DIUM.** *Stamens* crooked: *anthers* approaching: *involucr.* bristle-shaped, beneath the whirls.

\* It is very bitter to the taste, and not altogether unpleasant to the smell. It was a favourite medicine with the ancients in obstructions of the viscera. In large doses it loosens the belly. It is a principal ingredient in the Negro Cæsar's remedy for vegetable poisons. A young man, who had occasion to take mercurial medicines, was thrown into a salivation, which continued for more than a year. Every method that was tried to remove it, rather increased the complaint. At length Linnaeus prescribed an infusion of this plant, and the patient got well in a short time. Horses, cows, sheep, and goats refuse it.

† The leaves have a strong but not an agreeable smell, and a bitter taste. Goats, sheep, and horses eat it. Cows are not fond of it. Swine refuse it.



vulga're.

C. Heads roundish, hispid; floral-leaves bristle-shaped.

*Fl. dan.* 930—*Kniph.* 11—*E. bot.* 1401.—*Clus.* i. 354. 2—*Lob. obs.* 269. 2—*ic.* i. 504. 2—*Ger. em.* 675. 2—*Park.* 22. 4—*H. ox.* xi. 8. row 1. 1—*Pet.* 32. 9—*Riv. mon.* 43. 1, *Clinopodium*—*Trag.* 36. 2—*Lonic.* i. 118. 1—*Matth.* 814—*Lonic.* ii. 21. 1.

*Leaves* heart-egg-shaped, scalloped, on leaf-stalks. *Blossom* tube long; *upper lip* nicked, the lower scalloped. *RELHAN.* Whole *plant* hairy. *Heads* exceedingly hairy. *Calyx* with thirteen scores. *Mr. HOLLEFEAR.* *Stems* square, hairy, reddish. *Leaves* egg-shaped, serrated, sometimes nearly entire, on short leaf-stalks. *Flowers* many on one branched fruit-stalk. *Blossom* bright purplish red. *Mr. WOODWARD.* (Whole herb aromatic. *E.*)

*Round-headed Basil-weed.* *Wild Basil.* Meadows, hedges, and dry pastures, especially in a calcareous soil. [Plentiful about Clapham in Yorkshire. *Mr. CALEY.*] *P. July.*

**ORIG'ANUM.** *Flowers* forming a 4-sided spike-like cone.

vulga're.

O. Spikes roundish, paniced, clustered; floral-leaves egg-shaped, longer than the calyx.

*E. bot.* 1143—*Kniph.* 4—*Ludw.* 90—*Curt.* 338—*Woodv.* 164—*Riv. mon.* 60. 1, *Origanum.*—*Ger.* 541. 4—*Matth.* 1701—*Dod.* 285. 2—*Lob. obs.* 263. 1, and *ic.* i. 492. 2—*Ger. em.* 666. 4—*Park.* 12. 6—*H. ox.* xi. 3. 12—*Pet.* 34. 8—*Blackw.* 280—*Fuchs.* 552—*J. B.* iii. 236—*Trag.* 36. 1—*Lonic.* i. 118. 2—*Fl. dan.* 638.

*Stem* a little woolly, often coloured. *Leaves* egg-heart-shaped, very slightly serrated, opposite, dotted, more or less hairy. *Floral-leaves* spear-shaped, coloured. *Calyx* nearly equal; mouth closed with bristly hairs, which at first lie parallel to the sides, but when the blossom falls off they stand out closing up to the mouth; without beset with short fine hairs, and minute white shining globules. *Blossoms* pale red, hairy; the middle segment rather longer than the rest. *Stamens* as long, or longer than the blossom, but in some specimens they are shorter, and then the anthers appear to be destitute of pollen.

Var. 2. *Leaves* egg-spear-shaped.

*Lob. obs.* 264. 2—*ic.* i. 494. 2—*Ger. em.* 664. 2—*Park.* 12. 4—*H. ox.* xi. 3. 9.

This is commonly cultivated in our gardens, and has been supposed to be the *O. Onites* of Linnæus, (but can scarcely be esteemed a native of Britain. E.)

*Winter Marjoram.* *Wild or Field Marjoram.* Thickets and hedges, in a calcareous soil. [Catton, near Norwich. Mr. WOODWARD. In a wood near Cartmell Wells. Mr. ATKINSON. Clapham, Yorkshire, Mr. CALEY.] (On chalky soil in the neighbourhood of Dover, Kent. E.) P. July—Aug.\*

**THYMUS.** *Calyx* 2-lipped; mouth closed with soft hairs.

T. Flowers in heads; stems creeping; leaves flat, blunt, serpyllum, fringed at the base.

*Fl. dan.* 1164—*Kniph.* 6—*E. bot.* 1514—*Ludw.* 121—*Vaill.* 32. 9, and 7—*Curt.-Clus.* i. 359. 1—*Dod.* 277. 1—*Lob. obs.* 230. 2, and *ic.* i. 423. 2—*Ger. em.* 570. 1—*Park.* 8. 10—*Pet.* 31. 1—*H. ox.* xi. 17, row 1. 1—*Fuchs.* 251—*J. B.* iii. 269—*Blackw.* 418—*Matth.* 725—*Riv. mon.* 42. 2, *Serpyll. ft. minore.*—*Ger.* 455. 1, and 2—*Lonic.* i. 119. 1.

*Calyx* teeth fringed. *Stamens* as long as the blossom. LINN. *Filaments* those inserted below the upper lip shorter than the tube, those below the under lip longer than the tube. Mr. HOLLEFEAR. *Stems* woody, nearly cylindrical. *Leaves* oblong-egg-shaped, very entire, with hollow dots on both surfaces, fringed at the base with a few fine white hairs. *Calyx* coloured with a circle of white hairs running round the inside at the base of the segments, which, while the plant is in flower, lie flat to the sides of the calyx, but when the blossom falls off expanding close up its mouth. *Blossom* purplish red.

*Mother of Thyme.* *Wild Thyme.* Heaths and mountainous places. P. July—Aug.†

\* The whole plant is a warm aromatic. The dried leaves, used instead of tea, are exceedingly grateful; the essential oil of this plant is so acrid, that it may be considered as a caustic, and is much used with that intention by farriers. A little cotton wool moistened with it, and put into the hollow of an aching tooth, frequently relieves the pain. The country people use the tops to dye purple. Goats and sheep eat it. Horses are not fond of it. Cows refuse it.

† The whole plant is fragrant, and yields an essential oil that is very heating. An infusion of the leaves removes the head-ach occasioned by the excess of the preceding evening. A general opinion prevails, that the flesh of sheep, that feed upon aromatic plants, particularly upon Thyme, is much superior in flavour to common mutton; but Mr. BOWLES, the ingenious

It is subject to considerable variations, the principal of which are:

Var. 2. *white flowered*. HUDS. Blossoms white.

Var. 3. *large flowered*. HUDS. Blossoms large.

Vaill. 32. 8—Riv. mon. 42. 3, *Serpyllum*.—Pet. 31. 2.

*Serpylli vulgaris secundum genus*. R. Syn. 230—*Serpyll. vulg. flore amplo*. VAILL.

Var. 4. *broad-leaved*. LINN. Larger. Leaves broad.

Ger. 456. 3—Lob. ic. i. 424. 1—Ger. em. 573. 7—Park. 7. 7—Pet. 31. 3—Ger. em. 570. 3.

Okey Hole, Somersetshire.

*Serpyllum vulgare majus*. R. Syn. 231.

Var. 5. *Lemon*. Leaves with the scent of lemon peel.

Clus. i. 359. 2—Dod. 277. 2—Ger. em. 571. 7—Park. 8. 9—J. B. 270. 1—Ger. 458 2—Pet. 31. 4.

It is used in sauces.

Var. 6. *smooth*. Leaves narrow, smooth.

Sheldr. 52—Woodv. 110.

Boxly Hill, by Kitt's Coffee-house.

Var. 7. *hoary*. Differs from 1 in the hairiness of the leaves. RAY.

Vaill. 32. 6—Riv. mon. 42. 1, *Serp. mont. hirsut.*

Gogmagog Hills, and other barren places.

Var. 8. *shrubby*. More shrubby: hairy. Blossoms pale red. RAY.

Pastures on the summit of y Wýddfa, on Snqwdon, Caernarvonshire.

Var. 9. *scentless*. St. Hairy, small, creeping, scentless. PLUK.

*Serpyll. hirsut. min. rep. inodorum*. R. Syn. 231.

Ireland.

A'cinos.

T. Flowers in whirls, 1 upon each fruit-stalk; stems upright, somewhat branched; leaves acute, serrated.

author of the account of the Sheep-walks in Spain, (*Gent. Mag.* 1764.) considers this as a vulgar error. He says, sheep are not fond of aromatic plants; that they will carefully push aside the Thyme to get at the grass growing beneath it; and that they never touch it, unless when walking apace, and then they will catch at any thing. The attachment of bees to this and other aromatic plants is well known. Sheep and goats eat it. Swine refuse it. The *Phaëna papilionaria* lives upon it.

*Dicks. h. s.*—*Curt.-E. bot.* 411—*Kniph.* 8—*Riv. mon.* 43. 2, *Acinos-Clus.* i. 354. 1—*Dod.* 280—*Lob. obs.* 270. 2, and *ic.* i. 506. 1—*Ger. em.* 675. 1—*Park.* 21. 1—*H. ox.* xi. 18, row 1. 1—*Pet.* 32. 10—*Fuchs.* 896—*J. B.* iii. 259—*Lonic.* i. 116. 3—*Fl. dan.* 814—*Trag.* 37—*Ger.* 548. 1—*Matth.* 815.

*Stems* ascending. *Leaves* in distant pairs. Mr. WOODWARD. *Plant* hairy. *Calyx* scored, at the fore part at the base inflated, about the middle contracted, and then dilating into the lower lip. Mr. HOLLEFEAR. The middle segment of the lower lip of the blossom notched at the end. *Blossoms* purple.

*Basil Thyme.* Dry hills, and on chalk and gravel. Not unfrequent in Norfolk. Mr. WOODWARD; and Surrey. ST. On the side of Hamilton, Yorkshire. Mr. ROBSON. Wick Cliffs. Mr. SWAYNE. (Lackhampton Hill, two miles from Cheltenham. Rev. S. DICKENSON. E.) St. Vincents's Rocks.

A. June—Aug.

T. (Whirls many-flowered. E.) fruit-stalks axillary, forked, Ne'peta. longer than the leaves; stem ascending, hairy, (leaves serrated; hairs of the calyx prominent. E.)

*Riv. mon.* 47, *Calamentha fol. incano-Gies.* 1. 14—*Curt.-E. bot.* 1414—*Blackw.* 167—*Matth.* 617—*Dod.* 98. 2—*Lob. obs.* 275. 1, and *ic.* i. 513. 2—*Ger. em.* 687. 3—*Park.* 37. 4. a.

*Fruit-stalks* much longer than the leaves; their branches again forked, the last generally bearing three flowers, the two outer of which have a pair of floral-leaves, the middle one naked. *Floral-leaves* very small. WOODWARD. *Leaves* in opposite pairs, nearly sitting, egg-shaped. *Fruit-stalks*, the forks subdivided with three to six fruit-stalks, each supporting a flower. *Calyx* coloured, ribbed, beset on the outside with short hairs and shining glands, smooth within, but closed at the mouth with long hairs; the three upper teeth equal, the two lower rather longer, equal, and more pointed, ribs fifteen. *Blossom* pale bluish purple; *lower lip* beset at the base with white club-shaped bristles; lateral segments egg-shaped, the middle one kidney-shaped, toothed.

In a garden the leaves become six times as large as in the natural soil, but the flowers are not larger, and the fruit-stalks are shorter than the leaves.

*Lesser Calamint.* *Field Baum.* *Melissa Nepeta.* WITH. Ed. 4. Sides of roads and cornfields, and hedge banks. [Nor-



folk, frequent. Mr. WOODWARD.] (About Hastings Castle. Mr. BORRER. Near Tunbridge Wells. Mr. FORSTER. Hedge on the right just below the Kennet Bell, Suffolk. Sir T. G. CULLUM. In the old sandpits at the back of Charlton Church, Kent. CURTIS. Common in Essex. South Normanton, Derbyshire. PILKINGTON. Denbigh Castle; and Graig near Denbigh. Mr. GRIFFITH. Neighbourhood of Malton, Yorkshire. TEESDALE, in *Bot. Guide*. E.) P. Aug.\*

*Calamen'tha*. (T. Whirls many-flowered; E.) fruit-stalks axillary, forked, as long as the leaves; (leaves slightly serrated; hairs of the calyx closed, not prominent. E.)

*Kniph*. 4—*Ludw*. 33—*Riv. mon*. 46. 2, *Calamentha*—E. *bot*. 1676—*Dod*. 98. 1—*Lob. obs*. 274. 2, and *ic*. i. 513. 1—*Ger. em*. 687. 3—*Park*. 36—*H. ox*. xi. 21. row. 2, 3—*Pet*. 34. 1—*Blackw*. 166—*Matth*. 716—*Ger*. 552. 1.

*Fruit-stalks* generally shorter than the leaves, sometimes as long as, and near the ends of the branches longer. WOODWARD. *Leaves* in opposite pairs on leaf-stalks. *Fruit-stalks* three-forked, the lateral arms forked. *Calyx* with thirteen ribs, short hair, and shining globules; segments fringed, and the mouth closed with long hairs; teeth pointing upwards after the blossom falls off, the three upper equal, the two lower longer, and more pointed. *Blossom* tube beset within with white club-shaped hairs; *upper lip* lilac-coloured within; *lower lip* pale within, but marked with three round dots, and a few short streaks of a deeper hue. *Summit*, one segment greatly longer than the other, and hooked. (*Blossom* twice the length of the calyx. E.)

*Calamint Baum*. *Melissa Calamintha*. WITH. Ed. 4. Sides of roads and cornfields. [Dudley Castle. Near Tamworth Castle. Banks of the Avon, near Bristol.] P. June—Aug.†

MELIT'TIS. *Calyx* wider than the tube of the blossom: *bloss.* upper lip upright, entire; lower lip 3-cleft: *anthers* each pair forming a cross.

Melisso-  
phyl'lum.

M. Calyx three-lobed. E. bot.

\* The *Cassida viridis* feeds upon it.

† All the plants of this genus yield a fragrant, aromatic odour, and an essential oil.

*E. bot.* 577—*Jacq. austr.* 26—*Kniph.* 6—*Riv. mon.* 21—*Melissophyllum*—*Lob. obs.* 277. 2. and *ic.* i. 515. 1—*Ger. em.* 690. 3. f. 1—*Park.* 41. 4—*Fuchs.* 498—*J. B.* iii. 233. 2. —*Trag.* 12—*Clus.* ii. 37. 2—*Cum. hort.* 30—*J. B. ib.* 1.

*Calyx* upright, three-cleft; the upper segment often marked with a small tooth on each side. *Blossom* white; *tube* twice as long as the *calyx*; *border* with four divisions, expanding, consisting of an *upper lip* roundish, upright entire; and a *lower lip* with three clefts, the middlemost larger, flat, entire, purple. *Anthers* yellow, shorter than the blossom. LINN. *Stem* somewhat square, scored, hairy. *Calyx* hairy below, nearly smooth above, large, veined and tipped with purple. WOODWARD. Whole *plant* hairy. *Leaves* opposite, egg-spear-shaped, wrinkled, serrated, the teeth terminating in purplish glands. *Fruit-stalks* from the bosom of the leaves, two or three together, not expanding altogether. *Calyx*, *border* on the upper side turned outwards like a spout, with a spear-shaped segment on each side, the lower lip cut off and finely serrated. *Blossom* white, stained with purple, except the middle segment of the lower lip, which is a full purple edged with white. *Anthers* of the shorter stamens lying close to each other in form of a cross.

*Rastard Balm*, or *Baum-leaf*. Hedges and woods in the West of England. About Totness, Devonshire; Haverfordwest, Pembrokeshire; New Forest, Hants. (In St. Leonard's Forest, going down into Isemonger's Gill, by the cross road from Hand Cross to the Horsham road. Mr. BORRER. E.)

P. May—June.

*M. Calyx* four-lobed. *E. bot.*

*grandiflora*.

*E. bot.* 636—*Curt. Mill. ill.*—*Ger. em.* 690. 3. f. 2.

On the authority of Dr. Smith in the English Botany, we cannot hesitate to insert this new species of *Melittis*, there first distinctly separated from the *M. Melissophyllum*. It is one of the most beautiful of the plants natural to this island, and has been lately found by Mr. D. Turner and Mr. Sowerby, in great plenty about a mile from Ashburton in the road towards Plymouth, and also in Cornwall.—Dr. Smith observes the *calyx* is four-lobed, having on each side two lateral, not vertical lobes, sometimes notched, but more generally entire. The *blossom* is larger than in the more common species, white, with a pale tinge of yellow on the upper side, the lower lip marked with a large undivided purple spot, surrounded by a white margin. (This plant generally resembles the preceding species, but differs materially in the structure of the blossoms. E.)

*Purple and White Bastard Balm.* (By the road side at Hall, near Barnstaple. CURTIS. Common in most coppices in every part of Devon and Cornwall. It is frequently admitted into gardens. Road side between Liskeard and Callington.—A mile from Ashburton on the road to Plymouth, in the hedges in great plenty. Mr. DAWSON TURNER. E.) P. May—June.

**SCUTELLA'RIA.** *Calyx*, rim nearly entire, closed after flowering; covered with a lid.

*galericula'ta*. S. Leaves heart-spear-shaped, scalloped, wrinkled; flowers axillary.

*Curt.* 155—*E. bot.* 523—*Kniph.* 8—*Riv. mon.* 77. 1, *Scutellaria*—*Blackw.* 516—*Walc.—Fl. dan.* 637—*H. ox.* xi. 20. row 3. 6—*Lob. obs.* 186. 3. and *ic.* i. 344. 2—*Dod.* 93. 2—*Ger. em.* 477. 10—*Park.* 221—*Pet.* 34. 10.

*Stem* nearly smooth. *Leaves* nearly smooth, scalloped at the base, entire upwards. *Flowers* hairy on the outside. **WOODWARD.** *Plant* much branched, about half a yard high. *Blossom* blue. *Anthers* purple. (*Stem* acutely quadrangular. *Blossom* funnel-shaped. *Summit* simple. *Leaves* on very short leaf-stalks, wrinkled, veined, pubescent, paler underneath. E.)

*Hooded Willow-herb. Blue Skull-cap.* Banks of rivers and edges of ponds. [Side of the stews at Edgbaston, near Birmingham.] P. July—Aug.\*

*mi'nor.*

S. Leaves heart-egg-shaped, nearly entire; flowers axillary.

*Dicks. h. s.—Curt.* 283—*E. bot.* 524—*Ger. em.* 581. 3—*Park.* 220. 4—*H. ox.* xi. 20. row. 3. 8—*Pet.* 34. 11—*Ger.* 466. 2.

Very small and slender. *Leaves* egg-shaped, with only one or two scallops at the base. **WOODWARD.** *Plant* from four to

\* When the blossom falls off, the cup closes upon the seeds, which, when ripe, being still smaller than the cup, could not possibly open its mouth, or overcome its elastic force, as the down of the seeds do in the compound flowers, and must consequently remain useless without a possibility of escaping. But nature, ever full of resources, finds a method to discharge them. The cup becoming dry, divides into two distinct parts; when the seeds, already detached from the receptacle, fall to the ground. Cows, goats, and sheep eat it: horses and swine refuse it.

eight inches high, generally unbranched. *Leaves* sometimes egg-spear-shaped, a little serrated towards the base, slightly hairy. *Calyx* with two lips, but very slightly cloven; *upper lip* with a flat ridge running across it, which, when the blossom falls, enlarges and pressing down the upper lip, closes the mouth of the calyx, giving it the appearance of a helmet; middle segment rather shorter, nearly flat; *lower lip* broad, rather reflected, but neither notched at the end nor keeled beneath. *Blossom* reddish purple, the lower lip mottled within with deeper coloured spots. *Anthers* white. *Summit* slightly cloven. (*Leaves* broader and less wrinkled than those of the preceding species. E.)

*Lesser Scull-cap.* Boggy ground and edges of ponds: [Hampstead Heath, where Gerard mentions to have found it. Mr. AIKIN. Lewesdon hill. Mr. BAKER. In Goldmire near Dalton. Mr. ATKINSON. Seaman's Moss, on the part next to Altringham, Cheshire. Mr. CALEY. In Bagot's Park, and on Norton Bog, Staffordshire. Hon. Mr. BAGOT. Needwood Forest, Staffordshire.] (In Terrington Car, Yorkshire. TEESDALE. Sides of the bogs on the Forest near Tunbridge Wells. FORSTER, in *Bot. Guide*. In a pit at Streatham. MARTYN. Putney and Shirley Commons. CURTIS. Warcham Heath, and in Purbeck. PULTENEY. Culgaith Moor, and Keswick. HUTCHINSON. Boggy places on Staley Moor, Cheshire. Mr. BRADBURY. Swampy meadows and pastures about Caernarvon and Llanberris. BINGLEY. E.) P. July—Aug.

**PRUNELLA.** *Filaments* forked, one of the divisions bearing the anthers: *summit* cloven.

P. All the leaves egg-oblong, serrated, on leaf-stalks; up-*vulgaris*: per lip of the calyx lopped, 3-toothed.

*Curt.* 229—*E. bot.* 961—*Ludw.* 19—*Kniph.* 5—*Fl. dan.* 910—*Blackw.* 24—*Mill.* 69. 2—*Död.* 136. 1—*Lob. obs.* 251. 3. and *ic.* i. 474. 2—*Ger. em.* 632. 1—*Park.* 1680. 1—*H. ox.* xi. 5. row 1. 1. f. 4—*Pet.* 32. 11—*Walc.—Riv. mon.* 29. 1, *Brunella*—*Ger.* 507. 1—*Fuchs.* 621—*J. B.* iii. 428. 2—*Trag.* 310—*Matth.* 963.

In open sunny situations it grows trailing, and not above a finger's length, but in woods it is upright, and near a foot high. LINN. Whole plant thinly set with hairs. *Leaves* opposite. *Floral-leaves* heart-shaped, ribbed, edged with purple and fringed. *Calyx*, *upper lip* with seven ribs; *lower lip* with two spear-



shaped segments, each marked with three lines, and serrated with short stiff hairs. *Blossom upper lip* slightly notched at the end: *lower lip*, middle segment jagged. *Summit*, segments rolled back. *Blossom* blue, purplish, or white. (*Stem* often branched, set with whitish hairs. *Spikes* terminal, solitary. E.)

*Self-heal.* Meadows and pastures.

P. Aug.

## ANGIOSPERMIA.

**BART'SIA.** *Calyx* 2-lobed, notched at the end, the points (sometimes) coloured: *bloss.* (sometimes) less coloured than the calyx; the upper lip longer: *capsule* 2-celled.

visco'sa.

B. Upper leaves alternate, serrated: flowers distant, lateral, (anthers hairy. Fl. Brit. E.)

*E. bot.* 1045—*Lightf.* 14. at p. 321—*Ger.* 85—*Pluk.* 27. 5—*Pet.* 36. 6—*Barr.* 665.

*Stem* cylindrical, simple. *Leaves* sitting, spear-shaped, sharply serrated, slightly hairy. *Flowers* single, from the bottom of the leaves, on short fruit-stalks. *Calyx* very large, as long as the blossom, with five deep divisions; segments spear-shaped, clammy. *Blossoms* yellow. **WOODWARD.** *Stems* sometimes branched from the bottom upwards, nearly to the middle. *Calyx* with four nearly equal segments, rarely with five. I have never seen it coloured. *Filaments* rolled in a spiral under the upper lip of the blossom. *Anthers* pointed at the bottom. **MISS GIDDY.**—**MR. STACKHOUSE** also observes that the *calyx* is not coloured.

*Marsh Painted-cup.* *Yellow viscid Bartsia.* Marshes in Cornwall and Devonshire; about Latham, near Ormskirk, Lancashire; and about Ardencaple in the vicinity of Loch Gyle, near Loch Long, in the district of Cowal, Argyleshire. [Cornfields near Plengwarry, and Cosgarne, Cornwall. **MR. WATT.**] (Found at Allerton, near Liverpool, by **MR. ROSCOE**; at Crosby, and four miles N. W. of Warrington, plentiful. **Dr. Bosrock.** E.)

A. July—Aug.

alpina.

B. Leaves opposite, heart-shaped, bluntly serrated; (anthers hairy. Fl. Brit. E.)

*Dicks. h. s.*—*E. bot.* 361—*Fl. dan.* 43—*Pluk.* 163. 5—*Pon. in Clus.* ii. 343.

*Leaves* heart-spear-shaped. *Flowers* in a short terminating spike. *Mr. WOODWARD.* *Blossoms* in leafy spikes, purple. (*Stem* about a span high, upright, simple, leafy, inclining to shew four angles, hairy. *E.*)

*Mountain Painted-cup.* *Alpine Bartsia.* Banks of rivers in rough sunny places. By a rivulet near Orton, in crossing the road to Crosby, Westmoreland. *RAY. HUDSON.* (Near Middleton in Teesdale, Durham. *Rev. Mr. HARRIMAN.* Among rocks to the East of Malghyrdy in the highlands of Scotland. *DICKSON.* *Linn. trans.* v. 2. 290. P. July—Sept. *E.*)

B. Upper leaves alternate, spear-shaped, serrated; flow-*Odontites.*  
ers in bunches, pointing one way. *HUDS.* (anthers  
smooth. *Fl. Brit. E.*) See *Euphrasia Odontites.*

It differs from *Euphrasia officinalis* in the segments of the lower lip of the blossom not being entire, it agrees in the structure of the calyx, and the hairs of the anthers, in both which circumstances it differs from the *Bartsia*. *ST.* *Mr. Afzelius* observed to me, that this agrees in generic character with the *Bartsia alpina*, but that the latter has not the character of the other *Bartsias*; he therefore would constitute a new genus to contain these two plants.

**RHINAN'THUS.** *Calyx* 4-cleft, inflated: *capsule*  
2-celled, blunt, compressed; *seeds* few.

R. Upper lip of the blossom compressed, and shorter; *Crista gal'li.*  
calyx smooth.

*Curt.* 320—*E. bot.* 657—*Kniph.* 12—*Fl. dan.* 981—*Riv. mon.* 92. 2, *Crista galli*—*Dod.* 556. 1—*Lob. obs.* 285. 2, and  
*ic.* i. 529. 2—*Ger. em.* 1071. 1—*Park.* 713. 2—*H. ox.* xi.  
23, row 2. 1—*Pet.* 36. 2—*Walc.—J. B.* iii. 436. 3—*Ger.*  
912.

*Calyx* equal, four-cleft. *Capsule* bordered at the edge.  
*Seeds* inclosed by a loose membrane. *LINN.* *Stems* nearly four-  
cornered, with dark purple stains. *Leaves* in pairs, opposite, sit-  
ting, spear-shaped, serrated, above dark greenaud rough, beneath  
grey with a curious net-work of green veins. *Blossom* yellow;

DIDYNAMIA. ANGIOSPERMIA. *Euphrasia*.

upper lip tipped with a dirty blue. *Germens* surrounded at the base by a membranaceous nectary, and in the front a short, thick, crooked, horn-shaped gland. The *seeds* when ripe rattle in the capsule, whence its English name.

*Yellow Rattle.* Meadows, pastures, and woods.

A. June—July.

Var. 2. LINN.—Blossoms smaller; lower lip purple. Corn-fields between Wetherby and Catall, and near Burrowbridge, Yorkshire, and W. Newton, Northumberland. RAY.

**EUPHRA'SIA.** *Cal.* 4-cleft, cylindrical: *anthers*, the lower ones with one thorny lobe at the base: *caps.* 2-celled, egg-oblong: seeds few, leaning backwards.

*officinalis.* E. Leaves egg-shaped, streaked, sharply toothed.

*Curt.* 335—*Fl. dan.* 1037—*E. bot.* 1416—*Woodv.* 220—*Sheldr.* 48—*Kniph.* 8—*Walc.—Ludw.* 135—*Riv. mon.* 90. 1, *Euphrasia*.—*H. or.* xi. 24. 1. *b.—Matth.* 1022—*Ger.* 537. 1—*Dod.* 54. 3—*Lob. obs.* 261. 1, and *ic.* i. 491. 1—*Ger. em.* 663—*Park.* 1329. 1—*H. or.* xi. 24. 1. *a.—Fuchs.* 247—*Trag.* 238—*J. B.* iii. 432. 3—*Blackw.* 427.

The lower lobes of the lower anthers terminate in a thorn which bends the filament to one side. LINN. *Stems* reddish. *Branches* in opposite pairs. *Leaves* sitting, mostly opposite. *Calyx* with five flat sides and five corners, but segments rarely five, unequal, spear-shaped, dark purple at the ends, and with a few dark purple globular glands strewed on the outside. *Blossom tube* rather crooked, a little hairy, stained with yellow; *upper lip* streaked with a few purple lines, cloven into two, segments ending in three teeth; *lower lip*, segments cloven at the end, with a very small tooth in the cleft, the lateral segments with three purple lines, the middle one with a yellow blotch. *Anthers* brown, with a few white hairs on the lower part where they open. *Summit* fringed with very minute glands round the edge. *Seed-vessel* slightly notched at the end, a little hairy towards the top, and marked with black dots. *Seeds* egg-shaped. *Blossoms* bluish white, with purple streaks.

*Common Eyebright.* Heaths; dry barren meadows and pastures. A. July—Sept. [But, on Arthur's Seat, near Edinburgh, I have found it in blossom in the beginning of May, in great plenty, and with stems from half to one and a half inch high, and the leaves bluntly serrated. ST.]\*

\* It is a weak astringent, and was formerly in repute as a remedy for impaired vision. It will not grow but when surrounded by plants taller than itself. Cows, horses, goats, and sheep eat it. Swine refuse it.

E. Leaves strap-shaped, all serrated.

Odontites.

*Curt.*—*Kniph.* 12—*E. bot.* 1415—*Fl. dan.* 625—*Riv. mon.* 90. 2, *Odontites*—*Dod.* 55—*Lob. obs.* 261. 2. and *ic.* i. 496. 2—*Ger. em.* 91. 2—*Park.* 1329. 3—*H. or.* xi. 24. 10—*Pet.* 36. 4—*Ger.* 85.

*Stem* bluntly four-cornered, rough. *Branches* in opposite pairs. *Leaves* sitting, opposite, rough; spear, or strap-spear-shaped. *Flowers* pointing one way, forming long, terminating, leafy bunches. *Calyx* hairy without. *Blossom* hairy; *upper lip* slightly notched at the end; *lower lip*, middle segment slightly indented at the end. *Filaments* flattened. The lobes of all the anthers ending at the base in a short taper point, and between the lobes are a number of white club-shaped substances. *Germen* compressed, hairy, surrounded and sheathed at the base by a skinny membrane. *Summit* knobbed. *Leaves* sometimes reddish. *Blossoms* dusky red, or purple.

*Red Eyebright.* *Bartsia Odontites.* HUDS. *Fl. Brit.* and *E. bot.* *Euphrasia Odontites.* LINN. HULL. SIBTH. ABBOT. CURT. (In meadows and pastures. E.)

Var. 2. Flowers white. Stem very light green. Leaves without the least tinge of red.

Sent to me by Mr. BOURNE, who gathered it on Northington Farm, Grimley, near Worcester.—(Mr. WOODWARD has also found this variety growing near Diss, in Norfolk. E.)—Cornfields and pastures. A. July—Sept.

**MELAMPY'RUM.** *Cal.* 4-cleft: *bloss.* upper lip compressed, edges bent back: *caps.* 2-celled, compressed, slanting, opening on one side: *seeds* solitary, bulging.

M. Spikes quadrangular; floral-leaves heart-shaped, compact, finely toothed, tiled

*E. bot.* 41—*Fl. dan.* 1104—*Kniph.* 11—*Riv. mon.* 81. 1, *M. cristatum*—*Pluk.* 99. 2—*J. B.* iii. 440. 2—*H. or.* xi. 23. 2.

*Floral-leaves*, the upper coloured; the lower spear-shaped. *Blossom* helmet purplish, or white, with a yellow edge. RELHAN. Whole *plant* nearly smooth, very much branched. *Stems* in the autumn one and a half to two feet high. *Branches* opposite, numerous, diverging, so that where numbers grow together they are so entangled that it is almost impossible to extricate them. *Leaves* opposite, sitting, strap-shaped but taper-pointed, those



below the branches bent down, on the branches parallel. *Spikes* terminating the stem and branches. *Floral-leaves* purplish, large, the middle tooth lengthened out into a long awl-shaped point bent down, very long at the bottom of the spike, shorter upwards, but all more or less so; sides doubled together, closely pressed together at the edges, forming a square head with hollow sides, having the horns at the angles. *Blossom* reddish; I have never observed them yellow, though I have seen thousands of them. Mr. WOODWARD.

*Crested Cow-wheat.* Woods of Cambridgeshire and Bedfordshire, plentifully; and among corn at Waltingfield, near Wakefield. Ripton Wood, Huntingdonshire, (and near Ixworth, Suffolk. E.) Mr. WOODWARD.—(In Maple-bush lane, Gressen-hall, Norfolk. Mr. CROWE. *Fl. Brit.* E.) A. June—July.

arven'se. M. Spikes conical, loose; floral-leaves with bristle-shaped teeth, coloured.

*Fl. dan.* 911—*E. bot.* 53—*Riv. mon.* 80, *M. arvense*.—*Kniph.* 1—*Clus.* ii. 45. 1—*Ger. em.* 90. 3—*J. B.* iii. 439. 2—*H. ox.* xi. 23. row 1. 1—*Dod.* 541. 2—*Lob. obs.* 23. 1, and *ic.* i. 37, *Trit. vacc.*—*Ger. em.* 90. 1—*Park.* 1327. 4—*Trag.* 663.

*Stem* upright, (about two feet high, E.) slightly hairy, branched. *Leaves* opposite, spear-shaped, lengthened out into a very long point, nearly sitting, slightly downy. *Flowers* in an oval head. *Floral-leaves* long, spear-shaped, wing-cleft, with teeth at the base, entire upwards, WOODWARD. *Blossom* yellow and dusky purple.

*Purple Cow-wheat.* Cornfields. Near Lycham, Norfolk; Horsley Bath, near Beeston Castle, Cheshire. [Costesey, near Norwich. Mr. CROWE.—Bixley, near Norwich. Mr. WOODWARD.] —(In the common field at Sporle, Norfolk, especially among wheat. Rev. J. S. WATTS, in *Bot. Guide.* E.) A. July.\*

pratense. M. Flowers lateral, pointing one way; leaves in distant pairs; blossoms closed.

*E. bot.* 113—*Kniph.* 11—*Walc. M. sylvaticum*—*Ger.* 84. 1 and 2—*Clus.* ii. 44. 2—*Lob. obs.* 22. 2, *ic.* i. 56. 2—*Ger. em.* 91. 1—*Park.* 1326. 1—*H. ox.* xi. 23. 3.

*Lower lip* of the blossom straight, not bent downwards, as in *M. sylvaticum*. *St.* *Mouth* closed, not gaping as in *M. sylvati-*

\* The seeds, when ground with corn, give a bitterness and greyish cast to the bread, but do not make it unwholesome. Cows and goats eat it. Sheep refuse it.

*cum*. LINN. Whole *plant* frequently brownish, beginning to flower early and continuing to flower all the summer, growing more and more branched, in the manner of *M. cristatum*, and in the latter part of the year extremely branched. *Branches* weak, opposite. *Leaves* on very short leaf-stalks, stiffish, from the bosom of the lower ones an egg-shaped gland, possibly an abortive flower, those towards the base of the branches strap-spear-shaped, the upper spear-shaped, taper-pointed, dark blackish green, with sometimes a tinge of purple. Only the *floral-leaves* toothed, so that early in the spring very few will be visible, but later they are very numerous, the branches extending in length and continuing to flower till the spike is very long; the *lower* halberd-shaped, with only two or three teeth at the base; the *upper* nearly with winged clefts at the base, with long awl-shaped reflected teeth, and ending in an acute spear-shaped point. *Blossom tube* somewhat furrowed, straight, white at the base, forwards faintly tinged with yellow; *lips* closely approaching, hairy within; *upper lip* slightly cloven; the *lower* with three shallow clefts. *Anthers*, the back pair firmly adhering together. Mr. WOODWARD. *Leaves* spear-shaped, greatly tapering towards the point, all serrated, but the serratures extremely fine, and the edges of the leaves being rather turned back, they are not very readily seen. *Stem* feeble, cylindrical towards the bottom, 4-cornered upwards. *Calyx* purplish without; *segments* with minute stiff bristles along the edge; the two *upper* longer. *Blossom* of a full yellow, very much compressed; the notch in the upper lip but barely perceptible; *lower lip* with two orange-coloured rising plaits; *tube* straw-coloured. *Filaments* 4, supporting what appears a single anther, which is egg-shaped, compressed, hairy at the edges, and opening at the front edge, divisible into four portions, but as readily breaking in any other direction; after flowering separating into two or four parts. *Style* corresponding to the bend of the upper lip of the blossom, rising over the anther, and presenting its *summit* to the opening, whence the pollen escapes. *Seed-vessel* a yellow glandular substance at the base on the fore part, doubled down, and so brittle as not to admit being straightened. The teeth at the base of the leaves, particularly of the leaves next to the flowers, sufficiently distinguish this from the *M. sylvaticum*, in which all the leaves are entire. The lower lip of the blossom in *M. sylvaticum* is turned downwards and outwards, but in *M. pratense* it turns upwards and inwards.

*Common Yellow Cow-wheat.* (Frequent in woods and thickets, especially in clayey soil. E.)

Var. 2. Blossom white, with two yellow spots on the lower lip. RAY.

Woods and thickets, in soil that holds the wet, not uncommon. [Frequent in woods and hedges in a clayey soil in Norfolk and Suffolk. WOODWARD. In woods near the road from Birmingham to Hales Owen. Woods at Edgbaston.]

A. July—Aug.\*

This has frequently been mistaken for the *M. sylvaticum*, probably because it generally grows in woods or on the skirts of woods; but this is not the only instance in which too much attention to a trivial name has been the occasion of error.

*sylvaticum*. *M.* Flowers lateral, pointing one way; leaves in distant pairs; blossoms widely gaping.

*E. bot.* 804—*Fl. dan.* 145—*Kniph.* 9.

Differs from *M. pratense* as follows:—*Stem* more nodding. *Leaves* fully expanding. *Blossom* only half as long, entirely yellow, and not with the tube white; mouth, or the opening between the lips, gaping and open. LINN. But the *M. pratense* has sometimes the whole of the blossom yellow, so that the circumstance of colour must not be too much trusted in distinguishing the two species. *Stem* upright, or nodding, weak, branched, leafy. *Leaves* very entire, all of them undivided, very long, spear-shaped.

*Wood Cow-wheat.* Woods and shady places. HUDSON. Not common. A much rarer plant than *M. pratense*. LIGHT-FOOT. In the way from Taymouth to Lord Breadalbane's cascade, and about Finlarig at the head of Loch-Tay. [Wick Cliffs. Mr. SWAYNE.] (Near Middleton, in Teesdale. Mr. ROBSON. *Fl. Brit.* Woods at Castle Howard. TEESDALE. Rydal, Westmoreland. Mr. J. WOODS, jun. Woods near Hanwood; near Bedston, Ludlow. Dr. EVANS. Banks of the Tees above Middleton; Egleston Wood. Rev. J. HARRIMAN. At Whince Bridge, Teesdale. Mr. BRUNTON. Scale Hill, Cumberland. Mr. J. WOODS, jun. *Bot. Guide.*—Side of Bala Pool, on the rock above Llanycil. Mr. GRIFFITH. E.) A. June—Aug.†

**LATHRÆA.** *Calyx* with 4 or 5 divisions: *germen* with a depressed gland at the base of the seam: *caps.* 1-celled; receptacles lateral, sponge-like.

\* Where this plant abounds, the butter is yellow, and uncommonly good. Swine are very fond of the seeds. Sheep and goats eat it. Cows are very fond of it. Horses and swine refuse it.

† Cows, sheep and goats eat it; and with a plentiful allowance of it soon grow fat.

L. Stem undivided; flowers pendent; lower lip 3-cleft. Squama'ria.

*Dicks. h. s.*—*E. bot.* 50—*Fl. dan.* 136—*Riv.* 89. 2, *Squamaria*.  
*—Barr.* 80—*H. or.* (xii. 16. 14—*Matth.* 964—*Ger.* 1387.  
 1—*J. B.* iii. 783. 2—*Blackw.* 430—*Dod.* 553. 1—*Park.*  
 1363. 4—*Clus.* ii. 120. 1—*Ger.* 1585. 1—*H. or.* xii. 16.  
 11.

Root beaded. Root-leaves none. Stem-leaves membranaceous, coloured. Branches none. Blossom lower lip white. LINN. Stem naked, except sometimes one or two oval scales. Flowers in a spike, from one side of the stem, in a double row. Floral-leaves roundish-oval, large, reddish, one at the base of each fruit-stalk, forming a double line opposite to the flowers. Calyx bellying, segments equal, bluntish. Blossom upper lip rather short, lopped. Mr. WOODWARD. Blossom pale purple except the lower lip. (Stem upright, fleshy, purplish. Anthers hairy. Summit notched at the end. E.)

Greater Toothwort. Grows only in shady places which the sun's rays can scarcely penetrate, it being almost destitute of leaves, and such plants alone can live without the solar light. LINN. Woods, shady lanes, and at the bottom of mountains, but rather rare. Maidstone, Kent; Harefield, (shady lane leading to the river, E.) thickets below Conzick-Scar, near Kendal. —Informed that it is found in woods in Derbyshire. Mr. WOODWARD.—In Plumpton. Mr. JACKSON; (also Studley and Mackershaw, and other woods, Yorkshire. Mr. BRUNTON. E.)—Not confined to shady woods, but its choice of situation is determined by other causes, for it is found in very light dry soil, and so entangled with the roots of some neighbouring tree, especially with those of the Hazel, that I have reason to believe it parasitical. Mr. GOUGH.—At the roots of trees in a wood near Gainsford, Durham. Mr. ROBSON.—(At Exton near Stamford. Earl of GAINSBOROUGH.—Newburgh woods, Yorkshire. Rev. Archdeacon PEIRSON. *Fl. Brit.*—Pleasley Park, Derbyshire. Mr. HALLOWS.—At the roots of old trees in Smallcomb wood; and in the shady walks of Prior-park, near Bath. Mr. SOLE.—In Leigh Wood, near Bristol. Mr. DYER.—Benthall Edge, Colebrook Dale; and shrubbery at Bitterley Court, near Ludlow. Dr. EVANS, in *Bot. Guide.* E.) P. April—May.

PEDICULARIS. Calyx 5-cleft: caps. 2-celled, sharp-pointed, slanting: seeds few, angular, pointed.

P. Stem (solitary, E.) branched; calyx crested with callous palus'tris. dots; lip of the blossom slanting.



*E. bot.* 399—*Riv. mon.* 92. 1, *Pedicularis*—*Pet.* 36. 3—*Ger.* 913.

*Stem* about a foot high. *Branches* expanding. *Leaves* and *flowers* distant. Mr. WOODWARD. *Stem* angular purplish. *Leaves* winged. *Leaflets* with winged clefts. *Flowers* solitary, in the bosom of the leaves. *Calyx* with two lips, opening side-wise; segments cloven and jagged, two of them bordered with leafy appendages. *Blossom* purple, sometimes white; *helmet* with a little tooth on each side, not notched at the end; *lower lip* fringed with fine soft hairs.

*Marsh Lousewort.* Marshes, ditches, moist meadows, and pastures. P. June—July.\*

sylvatica.

P. Stems (many, simple, spreading; E.) calyx oblong, angular, smooth; lip of the blossom heart-shaped.

*E. bot.* 400—*Clus.* ii. 111. 1—*Dod.* 556. 1—*Lob. obs.* 431. 3. and *ic.* i. 748. 2—*Ger. em.* 1071. 2—*Park.* 713. 1—*H. ox.* xi. 23. 13—*Fl. dan.* 225—*Pet.* 36. 4—*Trag.* 250—*Lonic.* i. 148. 2.

*Stem* very short. *Branches* from the root, long, spreading close to the ground. *Leaves* and *flowers* crowded. Mr. WOODWARD. *Branches* trailing. *Floral-leaves* deeply divided: segments toothed. *Calyx* angular, green within, purplish without, nearly half as long as the blossom, one of the clefts much deeper, segments toothed, that opposite to the deepest cleft the narrowest. *Blossom* purple, much slenderer than the calyx. *Tube* compressed. *Upper lip* with a little tooth on each side. *Lower lip* with three divisions, the middle segment a little smaller. *Filaments* the two taller hairy towards the top. (*Root-leaves* simple, egg-shaped, scolloped. E.)

*Pasture Lousewort.* Wet pastures and heaths.

P. June—July.†

Var. 2. Blossoms white.

[Near Redruth, Cornwall, towards the sea. Mr. WATT.—Near Berkhamsted. Mr. WOODWARD.]

\* This is an unwelcome guest in meadows, being very disagreeable to cattle. Goats eat it. Horses, sheep, and cows refuse it. Swine are not fond of it.

† The expressed juice, or a decoction of this plant, has been used with advantage as an injection for sinuous ulcers. It is said that if the healthiest flock of sheep be fed with it, they become scabby and scurfy in a short time; the wool will become loose, and they will be over-run with vermin. Cows and swine refuse it.

(A remarkable variety has been gathered in Sutherland by the Marquis of Stafford, and also since then by Messrs. Hooker and Borrer, with a solitary flower, which instead of its proper fringed form, with two long and two short stamens, has a salver-shaped regular blossom, with six stamens, four of which are longer than the others. *Goleopsis Tetrahit*, and the various species of *Antirrhinum* have been observed also to exhibit similar appearances occasionally. Linn. Tr. v. 10. p. 227. E.)

**ANTIRRHINUM.** *Calyx* with 5 divisions: *bloss.* either bulging at the base, or ending in a spur: *caps.* 2-celled, many-seeded, opening at the top and the divisions bent back.

(1) *Leaves angular, (alternate. E.)*

A. *Leaves heart-shaped, 5-lobed, alternate; stems trailing. Cymbalaria.*

*Curt.-E. bot.* 502—*Riv. mon.* 86. 2, *Cymbalaria*.—*J. B.* iii. 685—*Matth.* 1184—*Lob. obs.* 337. 2. and *ic.* i. 615. 1—*Ger. em.* 529. 6—*Park.* 682. 1—*H. ox.* v. 14. 30—*Lon.* i. 61. 2.

*Seeds* wrinkled like the kernels of the walnut. *Blossom* sometimes white. LINN. Whole plant smooth and shining. *Leaves*, the smallest with only three lobes; lobes of the lower blunt, of the upper pointed. *Flowers* on long fruit-stalks bending at the top. *Blossom* spur as long as the calyx. Mr. WOODWARD. *Stems* thread-shaped. *Leaf-stalks* very long, bending like tendrils. *Calyx* segments equal, smooth. *Blossom* pale purple; palate yellow, shaggy with orange-coloured hairs. *Nectary* slender, crooked, rather longer than the calyx.

*Ivy-leaved Snap-dragon.* Old walls. About London frequent, [particularly adjoining to the Thames. Walls of Burleigh Castle, near Stamford. Mr. WOODWARD.]—(On the walls of Windsor Castle. Rev. Dr. GOODENOUGH. *Fl. Brit.*—Old walls at Pontefract. Mr. BRUNTON.—Frequent in Sussex. Mr. BORRER.—On a wall at Oldport, near Oswestry. Dr. EVANS. *Bot. Guide.*—Various walls in Oxford. SIBTHORPE. E.)

P. June—Oct.\*

A. *Leaves egg-shaped, alternate, woolly; stems trailing. spurium.*

\* Its trailing branches variously interwoven often cover old moist walls with a thick tapestry, and when in blossom make a beautiful appearance. Mr. WOODWARD.

*E. bot.* 691—*Curt.* 205—*Fl. dan.* 913—*Fuchs.* 167—*J. B.* iii. 372. 1—*Dod.* 42. 1—*Ger. em.* 625. 1—*Lonic.* i. 63. 3—*Park.* 553. 1—*H. ox.* v. 14. 27—*Matth.* 694—*Ger.* 501. 1—*Lob. adv.* 197, and *ic.* i. 470. 1—*Riv. mon.* 86. 1, *Elatine*.

*Stem* branched from the base, with long expanding hairs. *Leaves* hairy, sometimes slightly toothed. *Fruit-stalks* from the bosom of the leaves. *Calyx* very hairy. *Blossom spur* shorter than the body of the blossom. Mr. WOODWARD. *Fruit-stalks*, the lower generally shorter, the upper longer than the leaves. *Blossom* yellow and purple. *St.*

*Round-leaved Snap-dragon.* Cornfields. [Suffolk, frequent. Mr. WOODWARD.—(At Scething, Norfolk. Mrs. KETT. *Fl. Brit.*—Langton and Pimpers cornfields near Blandford, and in those by the side of Hambledon Hill, in which latter Dr. Pulteney found this plant with flowers of the structure of *Peloria*. Sunderland Ballast Hills. Mr. WEIGHELL. *Bot. Guide.* E.)

A. July—Sept.

*Elatine*.

A. Leaves halberd-shaped, alternate; stems trailing.

*E. bot.* 692—*Curt.*—*Fl. dan.* 426—*Sheldr.* 60—*Park.* 553. 2—*J. B.* iii. 372. 2—*Ger.* 501. 2—*Matth.* 1012—*Blackw.* 170—*Dod.* 42. 2—*Lob. ic.* i. 470. 2—*Ger. em.* 625. 2—*H. ox.* v. 14. 28.

The capsule opens by the separation of a valve on each side. LINN. *Fruit-stalks* whilst in flower expanding, afterwards declining. *Nectary* a spur as long as the body of the blossom. Mr. WOODWARD. *Leaves* the lower ones opposite, sometimes egg-shaped and toothed. *Calyx* hairy. *Blossom* upper lip yellow, lower lip and the *anthers* edged with deep purple. Mr. THOMSON. (In general habit resembling the preceding species, but rather more slender. *Fl. Brit.* E.)

Var. 2. Flowers regular, 5-cleft, and with 3, 4, or 5 spurs as in *Peloria*. HUDSON.

*Sharp-pointed Fluellin*, or *Snap-dragon*. Cornfields. [Suffolk, frequent. Mr. WOODWARD. On walls in Cornwall. Mr. THOMSON.]

A. Aug.—Oct.\*

(2) *Leaves opposite: nectary long, pointed.*

*repens*.

A. Leaves strap-shaped, (glaucous, whorled, or scattered; stem paniced; calyx smooth, as long as the spur. *Fl. Brit.* E.)

\* This is considerably more bitter than the other species, and is said to have been used successfully in cases of foul ulcers, and in cutaneous eruptions.

*E. bot.* 1253—*Dill. elth.* 163. 197.

The lower *leaves* four or five in a whirl. *Flowers* in terminating spikes, pale blue. The flowering *stem* is stiff and upright, not at all corresponding with the idea given by the trivial name, which applies only to the root. (*Leaves* very entire, and smooth, glaucous. *Capsules* globular, furrowed. *Seeds* angular, rugged, black. *Fl. Brit.* It occasionally emits a sweet fragrance. It is now proved that Linnæus never saw the *A. repens* of Dillenius, but described it from that writer; and from the specimens of *A. monspessulanum* in the Linnæan Herbarium, Dr. Smith ascertains them to be precisely the same plant. It may be added in confirmation, that we have received this species from different botanists, and gathered on the same spot, with both appellations. E.)

*Creeping Snap-dragon, Pale Blue Toad-flax. A. monspessulanum.* LINN. Fields, banks, and walls near Henley, and in Herts. RAY. [Specimens from the West of Cornwall, sent by Mr. GIDDY.—(Hedges near Penryn. RAY.—Stone wall between Penryn and Falmouth. Mr. WATT.—Hebburn Ballast, Durham. Mr. WINCH.—Henley Hill, Oxfordshire, abundant, and plentiful about Llandovery and Llangaddock, South Wales. *E. bot.*—In the little lane from Cowes Castle, up the hill on the right hand. Mr. T. F. FORSTER, jun. *Bot. Guide*, in which work we find it stated that Sir Joseph Banks once found, on stubble fields near Southampton, in the autumn, a variety of this plant with flowers like the *Peloria*. E.) P. July—Sept.

A. Leaves nearly strap-shaped; the lower in fours; calyx arven'se. with clammy hairs; flowers in spikes; stem upright.

*Dill. elth.* 163. 198.

*Leaves* smooth. *Flowers* very small, blue. *Floral-leaves* and spur bent back. LINN.

Cornfields in a sandy soil. A. July—Aug.

Var. 2. Blossoms yellow.

*Col. ecphr.* 300. 1.

Near Settle, Yorkshire.

(3) *Leaves* opposite; *nectary* short, blunt.

A. Leaves mostly alternate, spear-shaped, blunt; stem minus. very much branched, spreading; (calyx longer than the spur. *Fl. Brit.* E.)



*Dicks. h. s.*—*Curt.* 296—*Fl. dan.* 502—*E. bot.* 2014—*Riv. mon.* 85. 2, *Linaria arv. min.*—*Lob. ic.* i. 406. 1—*Ger. em.* 549. 5—*Park.* 1334. 2—*J. B.* iii. 465. 1—*Matth.* 1198.

*Leaves*, only the three lowermost pairs opposite. LINN. *Stem* much branched, hairy. *Lower branches* opposite, the *upper* alternate. *Leaves* alternate. *Fruit-stalks* from the bosom of, and equal to, or longer than the leaves. *Calyx* segments strap-shaped, nearly equalling the blossom. *Blossom spur* blunt, shorter than the body of the blossom. Mr. WOODWARD. *Blossom* purple and yellowish white.

*Least Snap-dragon.* Gravelly cornfields. [Binham, Norfolk. Mr. CROWE.—Near Berkhamsted, Herts; (and cornfields at Field Dalleney, Norfolk. Mr. WOODWARD.—Willington Ballast Quay; Fulwell Hills, near Sunderland. Mr. WINCH, in *Bot. Guide.*—About Bury, Yarmouth, and Battersea. *E. bot. E.*)  
A. June—Sept.

(4) *Leaves alternate.*

*Linaria.*

A. *Leaves* spear-strap-shaped, crowded; stem upright; spikes terminating, sessile; flowers tiled; (calyx shorter than the spur. *Fl. Brit. E.*)

*Dicks. h. s.*—*E. bot.* 658—*Kniph.* 6—*Fl. dan.* 982—*Riv. mon.* 83. 1, *Linaria.*—*Woodv.* 221—*Sheldr.* 49—*Ludw.* 12—*Dod.* 183. 1—*Lob. obs.* 222. 2. and *ic.* i. 406. 2—*Ger. em.* 550. 1—*Park.* 458. 1—*Ger.* 440—*Lonic.* i. 154. 2—*Fuchs.* 545—*J. B.* iii. 456. 2—*Blackw.* 115—*Trag.* 357—*H. ox. v.* 12. 10.

(*Root* creeping, rather woody. *E.*) *Blossom*, the palate woolly, orange-coloured. *Nectary* long, awl-shaped. *Cap-sule* opening with equal divisions. LINN. *Stem* nearly cylindrical, smooth. *Branches* nearly upright, from the bosom of the leaves. *Calyx* smooth. *Blossom lower lip*, segments circular, the middle one much smaller, the projecting part orange-coloured, woolly, the rest of the blossom pale yellow and smooth.

Var. 2. Flowers nearly white.

Var. 3. Nectaries two or more to each flower.

*Common Yellow Toad-flax*, or *Snap-dragon*. *Butter and Eggs.* Barren meadows and pastures, road sides, common.

P. July—Sept.

Var. 4. *Peloria*. Blossoms regular, with five equal stamens and five nectaries.

Curt.-*Amoen. acad.* i. 3. at. p. 298—*E. bot.* 260—*Kniph.* 9.

Cup one leaf, with five divisions, equal, very short, permanent. Blossom petal one, funnel-shaped, yellow, paler towards the base, with five nectaries at the base. Tube long, straight, cylindrical, but distended from the middle downwards. Border with five divisions, blunt, equal, expanding, inner side filled with tawny hairs. Nectaries five, awl-shaped, flat, resembling a horn, growing in a circle round the base of the tube. Stamens filaments five, hair-like, equal, half as long as the tube, and fixed to the receptacle. Anthers roundish, fixed sidewise. Germen egg-shaped. Style thread-shaped, as long as the stamens. Summit thick and blunt. Capsule egg-shaped, with two cells and two valves. Receptacles convex, growing to the partition. Seeds several, angular. LINN.

Sandy fields about Clapham. HUDSON. A wood in Lincolnshire. *E. bot.* P. June—July.\*

(5) Blossom gaping; without a spur.

A. Blossoms without spurs; flowers nearly spiked; calyx Oron'tium. longer than the blossom.

Dicks. h. s.—*Fl. dan.* 941—Curt. 234—*E. bot.* 1155—*Kniph.* 12—*Riv. mon.* 82. 2, *Antirrhinum arvense*.—*Dod.* 182. 2—*Lob. obs.* 222. 1, and *ic.* i. 405. 2—*Ger. em.* 549. 4—*Park.* 1334. 1—*Lonic.* i. 155. 3—*Math.* 1199—*Ger.* 439. 4.

Capsule when opening resembles the skull of a monkey. LINN. Stem upright, branched, hairy. Leaves spear-shaped, very entire. Flowers axillary on very short fruit-stalks, sometimes, though rarely, sitting. Calyx segments strap-shaped, and lengthening after the falling off of the blossom. Capsule much shorter than the calyx. WOODWARD. Calyx hairy. Blossoms red, with a little yellow.

(Var. with a white blossom, and violet lips. In Norfolk. Rev. Mr. FORBY. *E. bot.* E.)

Lesser Snap-dragon. Calf's-snout Snap-dragon. [Cornfields on a sandy soil, and turnep fields, Norfolk. Mr. WOODWARD; and Worcestershire. Mr. BALLARD.—Cornfields, Hants, common. Mr. PITT.] A. July—Aug.

\* An infusion of the leaves is diuretic and purgative. An ointment prepared from them gives relief in the piles. The expressed juice mixed with milk, is a poison to flies, as is likewise the smell of the flowers.—Cows, horses, and swine refuse it. Sheep and goats are not fond of it.

ma'jus.

A. Blossoms without a spur; flowers in spikes; (calyx rounded, hairy. E.)

*E. bot.* 129—*Kniph.* 1. 3—*Ludw.* 51—*Riv. mon.* 82. 1, *Antirrhinum*—*Mill.* 42—*Dod.* 182. 1—*Lob. obs.* 221. 2, and *ic.* i. 404. 2—*Ger. em.* 549. 1. 2—*Ger.* 438. 1—*Matth.* 1197.

*Stem* spreading, rod-like. *Leaves* spear-shaped. *Calyx* leaves short, with clammy hairs. *Nectary* blunt, scarcely projecting. *Capsule* opening at the point obliquely, unequal at the base. LINN. *Leaves* on leaf-stalks. *Blossom* rose red with a yellow palate; sometimes white.

Var. 2. *Leaves* sitting, bent downwards. *Blossom* rose coloured or white.

*Greater Snap-dragon.* Old walls; chalk cliffs near Dover, and between Northfleet and Gravesend. [Walls near Norwich, and Cambridge. WOODWARD.—Walls of Rushall Castle near Walsall. Mr. PITT.—Somersetshire and Devonshire, plentiful, and on Berkeley Castle and Church in rich profusion.] (On the mouldering walls of Canterbury. E.) P. June—Aug.\*

SCROPHULARIA. *Cal.* 5-cleft: *bloss.* with 5 divisions; tube globular; the lower segment reflected: *caps.* 2-celled, partition double.

Scorodo'nia. S. *Leaves* heart-shaped, doubly serrated, (downy underneath; E.) bunch compound, with leaves interspersed.

*E. bot.* 2209—*H. or.* v. 35. row. 2. f. 2—*Pluk.* 59. 5—*Pet.* 35. 11.

Resembles *S. nodosa* and *S. auriculata*, but differs from the latter in the hairiness of the stem, and the want of appendages to the leaves. *Stem* very hairy. *Leaves* with a gaping hollow at the base, angles or serratures pointed, (*Mant.*) serratures blunt. (*Syst. veg.*) *Bunch* with leaves interspersed, which is not the case with the other species. LINN. *Leaves* downy, the upper terminated by an awn, as are the serratures. *Floral-leaves* awl-shaped, a pair beneath each division of the fruit-stalks. Mr. WOODWARD. *Blossom* dusky purple.

\* Though the seeds vegetate on the ground, it is only in dry soils and situations that the plant continues to live long enough to produce flowers.

*Balm-leaved Figwort.* Watery places and hedges. Island of Jersey, between the Port and St. Hillary. SHERARD. Sea shore about St. Ives, Cornwall. (Mr. Edward Lhwyd, Hudson, Dickson and others are reported to have gathered this very rare plant in the latter station: and we find by an insertion in Camden's Britannia, that Mr. E. Forster. jun. supposed he had discovered a new habitat in Hertfordshire; this, however proves a mistake, his plant being only a variety of *S. nodosa*. E.)  
P. July—Aug.

S. Leaves oblong-heart-shaped, 3-fibred at the base, *nodosa* corners of the stem acute.

*Fl. dan.* 1167—*Kniph.* 2—*E. bot.* 1544—*Ludw.* 72—*Gunn.* ii. 4. 1—*Blackw.* 87—*Fuchs.* 194—*J. B.* iii. 421—*Riv. mon.* 107. 1; *Scrophularia.*—*Matth.* 1130—*Dod.* 50. 1—*Lob. obs.* 289. 1, and *ic.* i. 533. 2—*Ger. em.* 716. 1—*Park.* 610. 1—*H. or.* v. 8. row. 3. 3—*Pet.* 35. 9—*Ger.* 579. 2—*Trag.* 184—*Lonic.* i. 135. 3.

Leaves three-fibred as in *Arctium Lappa*, and *Tussilago Petasites*. Bunch terminating. LINN. Stem, angles clearly acute, sometimes edged with a membranaceous line, but not to be called winged. Leaves imperfectly heart-shaped, the base being rather cut transversely. CRANTZ. Leaves and serratures pointed. Flowers on forked branches. Floral-leaves spear-shaped, taper-pointed, a pair to each flowering branch. WOODWARD. Upper-leaves nearly sitting, spear-shaped. Fruit-stalks cylindrical, with short pellucid hairs terminated by globules. Calyx toothed and membranaceous at the end. Blossom tube filled at the base with a honey-like liquor; upper segments purple; the rest pale green: the two lateral ones expanding; the lower rolled back. The little heart-shaped segment within the base of the two upper segments seems to deserve the name of *nectary*. Capsule sometimes with three or four cells. (Root consisting of roundish knobs. E.)

*Great Figwort.* *Kernelwort.* *Knobby-rooted Figwort.* Woods and moist hedges. P. July.\*

S. Leaves heart-shaped, b'unt, on leaf-stalks running *aquatica* down the stem; corners of the stem edged with a membrane; bunches terminating.

\* This plant is hardly known in modern practice; but the rank smell, and bitter taste of the leaves, seem to indicate some active properties.—Swine that have the scab are cured by washing them with a decoction of the leaves. Wasps resort greatly to the flowers. Goats eat it. Cows, horses, sheep, and wine refuse it.



DIDYNAMIA. ANGIOSPERMIA. *Digitalis*.

*Curt.* 291—*E. bot.* 854—*Kniph.* 11—*Blackw.* 86—*Fl. dan.* 507—*Dod.* 50. 2—*Lob. obs.* 288. 1, and *ic.* i. 533. 1—*Ger. em.* 715—*Park.* 613—*Pet.* 35. 10—*H. or.* v. 8. row. 3. 4—*Ger.* 579. 1.

*Stem* smooth, four-cornered, corners membranaceous; the membranaceous leaf-stalks running down the corners of the stem, and forming a membranaceous edge, which is often waved. LINN. *Leaves* heart-egg-shaped, scolloped. *Panicle* naked, branched; the lower branches opposite, the upper alternate, forked. *Floral-leaves* awl-shaped, a pair at the base of each branch. MR. WOODWARD. *Upper leaves* egg-shaped. *Flowers* dirty red.

*Water Betony*, or *Figwort*. Watery places, and banks of rivers. P. July—Sept.

verna'lis.

S. *Leaves* heart-shaped, (pubescent; E.) those of the stem in threes; fruit-stalks axillary, solitary, cloven.

*E. bot.* 567—*Fl. dan.* 411—*Riv. mon.* 107. 2; *Scrophularia flore lutea*—*Barr.* 273—*Clus.* ii. 38. 1—*Ger. em.* 717—*Park.* 608. 4—*C. B. pr.* 112.

*Stem* and *leaves* hairy. *Blossom* egg-shaped, yellow. LINN. *Leaves* doubly serrated. *Fruit-stalks* hairy, the primary ones longer than the leaves, the secondary short. *Floral-leaves* spear-shaped, hairy, a pair at the base of the secondary fruit-stalks. WOODWARD. (*Stem* with four angles, sometimes pentagonal. E.)

*Yellow Figwort*. Watery places and hedges. About Bury, and near Mitcham, Surrey; Gloddaeth, Caernarvonshire. [Fornham, near Bury, Suffolk. MR. WOODWARD.] (About Newburgh, near Coxwold, Yorkshire. Rev. Archdeacon PIERSON. *Fl. Brit.* About Llanforda, the seat of Sir W. W. Wynne. Merionethshire. BINGLEY. Moist hedges by the road side between Sampford and Hempsted, plentifully. MR. E. FORSTER, jun. *Bot. Guide.* E.) B. April—May.\*

DIGITA'LIS. *Cal.* with 5 divisions: *bloss.* bell-shaped; 5-cleft, bellying: *caps.* egg-shaped, 2-celled, many-seeded.

\* The different species of *Scrophularia* afford nourishment to the *Phaëna Verbasi*, *Curculio Scrophulariæ*, and *Tenthredo Scrophulariæ*.

D. Segments of the calyx egg-shaped, acute; blossom purpurea. blunt, upper lip nearly entire.

*Riv. mon.* 104, *Digitalis-Curt.-E. bot.* 1297—*Woodv.* 24—*Fl. dan.* 74—*Tourn.* 73. *A. E. L. M.-Fuchs.* 893—*Trag.* 889—*J. B.* ii. 812. 3—*Lonic.* i. 74. 1—*Blackw.* 16—*Dod.* 169—*Lob. obs.* 308. 2. *ic.* i. 572. 1—*Ger. em.* 790. 1—*Park.* 653. 1—*Ger.* 646. 1—*Lob. ic.* i. 572. 2—*H. ox.* v. 8. row 1. 1—*Swert.* 6. 1 and 2.

(*Stem* upright, rod-like, three or four feet high, pubescent, leafy, nearly cylindrical. *Capsules* egg-shaped, sharp-pointed. *Seeds* numerous, small. *Fl. Brit. E.*) *Leaves* wrinkled. *Blossom* the bellying part sprinkled on the inside with spots like little eyes. LINN. *Leaves* scalloped; teeth small, deep; with a net-work of fleshy veins underneath. *Leaf-stalks* half embracing the stem. *Floral-leaves* spear-shaped, half embracing the stem, purplish towards the point. Mr. WOODWARD. *Leaves* sitting, a little woolly underneath. *Flowers* in long terminating spikes, all pointing one way, nodding. *Blossoms* purple, elegantly mottled within; inversely conical, but swelling out on the under side.

*Purple Foxglove.* Hedge banks and sides of hills in dry gravelly or sandy soil, but it is not found in flat grounds, except in very dry land, for though the seeds vegetate there, the winter wet rots the roots, which are otherwise biennial.

Very common in the midland, but rare in the eastern counties. (Oliver's Mount, near Scarborough. Mr. TRAVIS. E.)  
B. June—July.\*

Var. 2. Flowers white.

[Shenstone lane near Hartlebury, Worcestershire. St.—About Moxhull, Staffordshire.] The pure milk-white colour of the blossoms makes this variety an ornament to our flower gardens.

LINNÆA. *Calyx* double, that of the fruit 4-leaved, that of the flower with 5 divisions, superior: *bloss.* bell-shaped: *berry* dry, 3-celled.

\* It is certainly a very active medicine, and merits much attention. For some account of its medical uses see WITHERING on the Foxglove, octavo, with a figure of the plant copied under the inspection of Mr. Curtis from his *Flora Londinensis*. (As a remedy in various kinds of Dropsy particularly that hitherto almost incurable disease Hydrothorax, its importance has been amply ascertained. It has more recently been employed as a sedative, and has proved serviceable in retarding the undue quickness of pulse, in many cases of pulmonary Consumption. E.)

borea'lis. L. Flowers in pairs.

*E. bot.* 433—*Fl. dan.* 3—*Blackw.* 597—*Fl. lapp.* 12. 4—*Kniph.* 9—*Ludw.* 142—*H. ox.* v. 2. 19.

*Stems* thread-shaped, from three to six feet long, trailing. *Leaves* opposite, roundish-egg-shaped, with two or three serratures on each side, ending in leaf-stalks. *Branches* alternate, undivided, upright, an inch long, bearing six or eight leaves. *Fruit-stalks* terminating the older branches, solitary, a finger's length, upright. *Blossom* white on the outside, flesh-coloured within. (In the night emitting a fragrant odour like the *Spiræa*. *Berry* dry, three-celled. *Seeds* solitary, or in pairs. LINN. E.)

*Two-flowered Linnæa.* [Lately found in an old fir wood at Inghismaldie in Kincardineshire, by Prof. BEATTIE.]

P. June\*

SIBTHORP'IA. *Cal.* with 5 divisions: *bloss.* wheel-shaped, with 5 divisions: *stamens* in distant pairs: *capsule* compressed, roundish, 2-celled; *partition* tranverse: *seeds* few.

Europæ'a. S. Leaves between kidney and target-shaped, scalloped.

*E. bot.* 649—*Pluk.* 7. 6—*Pet.* 6. 11.

*Habit* and *stem* of *Hydrocotyle*, fruit of *Veronica*. *Root* annual, but sometimes, as also the whole plant, perennial. *Stems* numerous, a foot long, thread-shaped, limber, not much branched, trailing, often throwing out roots, near the leaf-stalks, hairy. *Leaves* alternate, very remote, on leaf-stalks, like those of the *Chrysosplenium*, heart-orbicular, one side opening near the centre, horizontal, with six or seven slight lobes, the lateral ones the smallest, blunt, about the breadth of a pea, sprinkled with small, simple, scattered, transparent bristles. *Leaf-stalks* short, ascending. *Fruit-stalks* thread-shaped, from the bosom of the leaves, upright, solitary, as long as the flower, often shorter than the leaf-stalks, nodding after flowering. *Floral-leaves* awl-shaped, one towards the point of the fruit-stalks. *Calyx* five-cleft, hairy. *Blossom* generally five-

\* (Dr. Swediaur has ascertained this elegant little plant to possess qualities astringent and diuretic, and recommends an infusion in milk or water in cases of Rheumatic Gout. E.)

cleft, small, purple at the base, about the size of that of the *Limosella*. *Stamens* equal, always four, with a vacancy at one of the divisions of the blossom, whence its inequality, and its title to a place in this class. LINNÆUS.

*Bastard Money-wort*. Shady marshy places, springs and rivulets. Cornwall and Devonshire, frequent. (By Buckbarrow Well, in Longsleadale, Westmoreland. Mr. ROBSON. Meadows at Honington, Lincolnshire. BLACKSTONE. Under a damp, shady wall on the left, about two hundred yards before you come to Pont y Pridd, from Cardiff. Sir J. CULUM. *Bot. Guide*. E.) P. July—Sept.

**LIMOSELLA.** *Cal.* 5-cleft: *bloss.* 5-cleft, equal: *stamens* approaching in pairs: *germen* 2-celled: *caps.* often 1-celled, 2-valved, many-seeded.

L. Leaves spear-shaped.

aquatica.

*E. bot.* 357—*Fl. dan.* 69—*Hall. jen.* 6. 3. at p. 295—*H. ox.* xv. 2. row. 2. f. 2—*Pluk.* 74. 4—*Pet.* 65. 12.

*Leaves* rolled inwards. *Blossom* hairy above. *Stamens* two and two, in opposite pairs. LINN. *Stems* trailing. *Leaf-stalks* very long. *Flowers* solitary. *Blossom* white without, reddish within. (*Leaves* very entire, smooth. *Blossom* small; the tube bellying: the two upper segments often bent inwards, the lower ones narrower. *Stamens* short. E.)

*Bastard Plantain*, or *Plantain Mudweed*. Muddy and gravelly places liable to be flooded, and where waters have stood during the winter. A. July—Sept.

**OROBANCHÆ.** *Cal.* somewhat cloven: *bloss.* gaping: *germen* resting on a gland: *caps.* 1-celled, 2-valved, many-seeded.\*

\* (In the fourth vol. of Linn. Trans. will be found a paper by the Rev. CHARLES SUTTON. B. D. A. L. S. illustrative of this singular tribe of plants; by which it appears that they are not entirely *parasitic*, but that they acquire no small portion of sustenance from the soil by means of radical fibres. These plants have an acrid, astringent taste, and are rejected by all kinds of animals except the minuter *Cimices* and *Thripsæ*. They are *acotyledons*: for when a seed has attached itself to the root of a living plant, it swells into a pellucid squamose gem or bulb; and after throwing out around the point of adhesion several tender fibres, it pushes up at once into a perfect plant, without any lateral lobes or cotyledons, the capitulum resembling a young head of *Asparagus*. This process is well represented in Linn. Trans. v. 4. t. 17. E.)



(1) *Floral-leaves solitary.*

ma'jor.

O. Stem unbranched, pubescent; (blossom inflated; its upper lip undivided; lower in three equal segments; stamens smooth; style downy. E.)

*Curt.* 232-*E. bot.* 421-*Kniph.* 7-*Tourn.* 81, *Orobanche.*-*Riv. mon.* 89. 1, *Orobanche.*-*Ger.* 1130. 2-*Pet.* 69. 10-*Park.* 229. 1. a-*Matth.* 536-*Lonic.* ii. 24. 1.

*Root* large, fleshy, oval, scaly. *Leaves* none. *Stalk* eight to twelve inches high, with dry scattered scales. *Flowers* spiked, cylindrical, brownish rust-coloured. *Summit* yellow, bluntly heart-shaped. *Seeds* exceedingly numerous. *RELHAN.* *Plant* rust coloured. *Root* bulbous. *Stem* clothed with egg-shaped, scattered scales. *Floral-leaves* spear-shaped, solitary, taper-pointed, generally longer than the flower; (Dr. Smith says shorter. E.) *Calyx* with four teeth, the two outer longer and sharper, the lower blunt. *WOODWARD.* *Flowers* rust-colour, with somewhat of a purplish tinge, (a little incurved, keeled at the back. *Stem* angular, straight, downy. *Stigma* two yellow globules. E.)

*Common Broom-rape.* This parasitical plant is found in dry ground, on the roots chiefly of the class *Diadelphia*, as *Spartium scoparium*, *Genista tinctoria*, *Trifolium*, *Orobis tuberosus*, and also on *Hieracium sabaudum*, and *Centaurea Scabiosa*. [Also in cornfields in a sandy soil, which have probably had Broom growing on them. Broom Hills, very frequent. Mr. *WOODWARD.*—Shrawley Wood, Worcestershire. Mr. *BALLARD.*—On a dry bank near Clifton upon Teme, Worcestershire. *ST.*—Raby Park, County of Durham. Mr. *ROBSON.*]—(Near Alerton Hall, in the road to Liverpool. Mr. *ROBERT ROSCOE* and Mr. *SHEPHERD.* E.)

P. May—June.

(ela'tior.

O. Stem entirely undivided; blossom tubular, lower lip in three acute equal segments; lower part of the stamens downy; style smooth.

*Linn. Trans. v. 4. t. 17-E. bot.* 568.

The Rev. C. Sutton, who first discriminated this species, states that it has usually been confounded with *O. major*. It is taller and yellower than that plant, also bearing a much more numerous assemblage of flowers; as many as a hundred having been counted on one spike. Dr. Smith observes that the leaves of the calyx are united at the base before; the blossom is less inflated than in *O. Major*; its border much

curled and fringed; upper lip sometimes a little cloven. *Stamens* inserted into the tube above its base, smooth on the upper part. *Stigma* inversely heart-shaped, yellow.

*Tall Broom-rape.* Not uncommon in clover fields, balks and thickets. About Gunton, Kelling, Sherringham, Catton and Costesey. Rev. C. SUTTON of Norwich. At Houxton, Comberton Hill, Hill between Shelford and Stapleford. REL-HAN. P. July—Aug. E.)

(O. Stem simple; blossom tubular; upper lip undivided; minor. lower in three curled segments, of which the middle one is lobed; stamens fringed: style smooth. Fl. Brit.

*E. bot.* 422.

Smaller in all its parts than *O. major*; and more generally of a purplish cast, though it has been sometimes found by the Rev. C. Sutton of a pale yellow colour. *Floral-leaves* solitary. *Flowers* scarcely at all ventricose. *Calyx-leaves* more unequally divided, though not invariably so. *Stem* inclined to zig-zag in a slight degree. *Stamens* in their lower part thickly ciliated with projecting hairs, a distinction which never fails. *Stigma* purple. *E. bot.* Mr. Sutton remarks, Linn. Trans. v. 4. 181. that the stigmas are not well represented in the above-cited figure, and that the spike is frequently much longer, bearing more numerous and more thickly set flowers than are there represented.

*Lesser Broom Rape.* Plentiful in Kent, as found by the late Mr. Joseph Rayer, whence Dr. Smith conjectures it to be the *O. flore minore* of Dillenius in Ray's Synopsis. In various parts of Norfolk; especially in clover fields, to the roots of which it seems attached. Near Sheringham. Rev. C. SUTTON. A? July. E.)

(O. Stem simple; blossom tubular, its upper lip cloven, ru'bra. lower in three nearly equal segments; stamens fringed on one side at the base, germen and style at their summits; bractees solitary.

*E. bot.* 1786.

*Roots* creeping, but not parasitical. *Stem* about a foot high, bulbous and most scaly at the base, ending in a spike of nearly twenty flowers, and clothed, as well as the upper part of the blossom, with glandular viscid hairs. *Floral-leaves* spear-shaped, acute, *Calyx-leaves* undivided. *Blossom* very slightly

## DIDYNAMIA. ANGIOSPERMIA. Orobanche.

inflated, fringed with glandular hairs. *Style* red. The whole plant above ground is of a purplish red. The *flowers* smell powerfully like a honeysuckle or pink. *E. bot.*

*Red Fragrant Broom-rape.* An entirely new species of *Orobanche*, first described in English Botany, from specimens communicated by Mr. REES of Paternoster Row, who found it on the spot where it was first discovered, viz. the Basaltic Rock at Cave hill, near Belfast, in August 1805, by JOHN TEMPLETON, Esq. E.)

(2) *Floral-leaves in threes.*

- (cæru'lea. O. Stem simple; blossom tubular; upper-lip cloven and notched; lower in three equal entire segments; stamens smooth; floral-leaves three.

*E. bot.* 423—*Jacq. austr. t.* 276—*Gmel. Fl. Sib. v.* 131. *t.* 46. *f.* 1. E.)

*Stem* very scaly, slightly downy; (about a foot high. E.) *Scales* oval-spear-shaped. *Spike* loose. *Floral-leaves* oval-spear-shaped, somewhat keeled, as long as the calyx. *Calyx* with four deep divisions; segments awl-shaped, the two outer the largest, the inner one next the stem very small. *Blossom tube* longer than the calyx; *upper tip* short, cloven, roundish; *lower* 3-cleft. *Stamens* within the flower. Mr. WOODWARD. (In general less pubescent, and of a more decided blue colour than either *O. major* or *O. minor*. *Blossom* pale violet, with a downy white divided palate. *Stem* not always unbranched, according to the observation of the Rev. C. Sutton.

*Purple Broom-rape. O. cærulea.* VILLARS. *Orchis abortiva* of the older British authors. *O. purpurea.* JACQUIN. *O. ramosa.* var. 2. WITH. Ed. 4. Hilly pastures on the north coast of Norfolk. A single specimen was found in 1779, by Mr. SCARLES, near Northreps, and several more in 1796, near Sheringham, by Mr. SKRIMSHIRE, of Wisbeach; also by the Rev. C. SUTTON at Beeston, near Cromer. *E. bot.*—Near Alton, in Hampshire. RAY.—Among rocks at Steephill, Isle of Wight. Mr. CALEY; in the autumn of 1800. P. July. E.)

- ramo'sa. O. Stem branched; blossoms 5-cleft; (segments blunt, very entire, E.)

*E. bot.* 184; (the root in a diseased state, Mr. Woodward.)—*Sabbat.* iii. 12—*Cam. epit.* 311—*J. B.* ii. 781. 2—*Clus.* i. 271. 1—*Ger em.* 1312. 3—*Pet.* 69. 11.

*Root* a solid bulb, elliptical, naked, or furnished with one or two spear-shaped sitting scales, and numerous short thick fibres affixed laterally, adhering and intermixed with the fibres of the roots of Hemp or other plants. *Stem* a continuation of the bulb, nearly cylindrical when fresh, angular when dry, slightly downy, brown or dirty yellow, naked, or furnished with very few scales. *Branches* either immediately from the root, or alternate, swelling at the base, nearly upright, with each a scale at the base. *Spikes* terminating. *Floral-leaves* oval-spear-shaped, somewhat keeled, sitting. *Calyx* segments pointed, the two outer largest, the inner halved, the sides next the stem being wanting. *Blossom tube* ventricose, yellow at the base, the upper part and lips bluish purple, hairy on the outside; *upper lip* roundish, cloven, *lower lip* broad, 3-cleft, the middle segment largest, and with two yellowish prominencies at the mouth, similar to those in *Melampyrum*. *Filaments* within the tube, bluish. *Authers* yellow. *Style* longer than the filaments and bending towards them, bluish. *Summit* blunt. WOODWARD. *Stem* about a span high, generally, but not always branched.

*Branched Broomrape. Orobanche minor purpureis floribus sive ramoso.* J. B. ii. 781. (Mr. WOODWARD.) Cornfields and dry pastures. (Mr. Sutton has found it only in rich moist soil. E.) Near Beccles, Suffolk. RAY.—Isle of Sheppey, and near Feversham and Rochester; about Glastonbury, and in Devonshire and Hants. HUDSON.—(In a Hemp field on the opposite side of the river at Mettingham, near Beccles, E.) and Brome near Bungay, Suffolk, on the roots of Hemp and *Galeopsis Tetrahit*, both annual plants. Mr. WOODWARD.—Hemp fields near Wisbeach. Mr. RELHAN.—(Among Hemp at Outwell, Norfolk. Rev. C. SUTTON. E.) A. June—Sept.



## CLASS XV.

## TETRADYNAMIA.

## SILICULOSA.

(1) *Pouch not notched at the end.*ALYS'SUM. *Pouch* egg-shaped, crowned with the style: valves rather concave.\*DRA'BA. *Pouch* with nearly flat valves: *Style* none.SUBULA'RIA. *Pouch* with half-egg-shaped valves: *Style* shorter than the pouch.BU'NIAS. *Pouch* deciduous; egg-oblong; prickly.CRAMBE. *Pouch* deciduous; globular; like a dry berry: *Filaments* 4, long ones cloven at the end.ISATIS. *Pouch* deciduous; spear-shaped; with 1 seed.VEL'LA. *Pouch* with valves only half the length of the partition.

[Coronopus. Ruellii.]

(2) *Pouch notched at the end.*

IBERIS. Two outermost petals the largest.

COCHLEA'RIA. *Pouch* heart-shaped: *Valves* blunt bulging.(CORONOPUS. *Pouch* nearly entire, compressed, rugged, without valves, 2 seeded. E.)LEPIDIUM. *Pouch* heart-shaped: *Valves* sharply keeledTHLASPI. *Pouch* inversely heart-shaped: *Valves* (in some species) bordered; keeled.

\* (The circumstance of the pouch being notched at the end, or otherwise seems to afford no certain characteristic of this genus. E.)

## SILICUOSA.

(1) *Cup closed ; the leaflets approaching lengthwise.*

RA'PHANUS. *Pod jointed.*

ERYSIMUM. *Pod 4-cornered.*

CHEIRANTHUS. *Germen with a gland on each side its base.*

HESPERIS. *Glands within the shorter stamens: Petals oblique.*

A'RABIS. *Glands 4; within the leaflets of the cup: Summit undivided.*

BRASSICA. *Glands, 2 within the shorter stamens; 2 on the outside the longest stamens.*

TURRITIS. *Petals upright.*

DENTARIA. *Pod, valves, rolling back when open.*

(2) *Cup open, the leaflets wide asunder upwards.*

CARDA'MINE. *Pod opening; Valves rolling back.*

SINAPIS. *Pod opening: Cup expanding horizontally.*

SISYMBRIUM. *Pod opening: Valves nearly straight: Cup open.*

[*Brassica Napus.*]

## SILICULOSA.

ALYS'SUM. *Pouch entire, notched at the end, crowned with the style: valves concave, parallel to the partition: (two of the filaments marked with little teeth. E.)*

(A. Stem herbaceous; leaves spear-arrow-shaped; pouch sativum. inversely egg-shaped, inflated. Fl. Brit. E.)

TETRADYNAMIA. SILICULOSA. *Alyssum*.

*Fl. dan.* 1038—*E. bot.* 1254—*Kniph.* 11—*Trag.* 655—*Lonic.* i. 154. 1—*Ger.* 213. 2—*Dod.* 532. 1—*Lob. obs.* 111. 3 and *ic.* i. 224. 2—*Ger. em.* 273. 3—*Park.* 868. 2—*Pet.* 48. 11—*H. ox.* iii. 21. row 3. 2—*J. B.* ii. 892—*H. ox.* iii. 21. row 2. 1. *f.* 4—*Matth.* 1172.

*Pouch*, each side bellying out, but marked with a cavity pressed inwards, which cavity disappears in the cultivated plants. LINN. *Stem* cylindrical below, somewhat angular above, slightly hairy, clothed with leaves. *Leaves* alternate, spear-shaped, arrow-shaped at the base, half embracing the stem, slightly toothed, hairy. *Blossom* yellow. *Pouches* on long fruit-stalks, terminated by a long style; *partition* extending beyond and forming a strong ridge round the seed-vessel. WOODWARD. (*Petals* blunt, entire. *Seeds* slightly angular, inversely egg-shaped, never notched at the end. *Fl. Brit. E.*)

*Gold of Pleasure. Common Camline. Myagrum sativum.* Sp. pl. *Moenchia sativa.* WITH. Ed. 4. Cornfields; among flax often plentifully, but apparently imported along with it from foreign countries. Near Bridport and Lyme in Dorsetshire. Heydon, Norfolk. Rev. Mr. BRYANT. (In Hezlington field near York. Sir THOMAS FRANKLAND. Out of St. Giles's Gate, Norwich, by the road side. Dr. SMITH. Lackenheath Field, by Wangford, Suffolk. *E. bot. E.*) A. May—June.\*

(*maritimum.* A. *Stem* somewhat woody, much branched, spreading; leaves spear-shaped, sharp-pointed, entire, hoary with close-pressed hairs; stamens simple; pouch compressed.

*E. bot.* 1729—*Curt. Mag.* 101.

*Leaves* alternate. *Blossoms* numerous, white, fragrant. *Stamens* and *claws* of the *petals*, turning purple in decay. *Pouches* in long clusters, 2-celled, 2-seeded, a little convex. *E. bot.*

*Sweet Camline. Alyssum maritimum.* WILLDENOW. A. *minimum.* LINN. Half a mile from the sea near Aberdeen, added to the British Flora by Professor W. DUNCAN of Aberdeen; since found on the maritime cliffs of Devon, at Budleigh, Salterton, by Mr. W. J. HOOKER.

In the more genial climates of the South, perennial; in this country more frequently annual. *E.*)†

\* It is cultivated in Germany for the sake of the expressed oil of the seeds, which the inhabitants use for medicine, culinary, and economical purposes. The seeds are a favourite food with geese. Horses, cows, goats, and sheep eat it.

† (It is commonly cultivated in flower borders for its agreeable honey-like scent. *E.*)

**BU'NIAS.** *Pouch*, or rather *drupa*, 4-sided, deciduous: angles unequal, acute.

**B.** Pouch egg-shaped, smooth, with two edges and two Cak'le joints; (leaves fleshy. E.)

*E. bot.* 231—*Fl. dan.* 1168—*Kniph.* 8—*Lob. obs.* 110. 3. *ic.* i. 223. 1—*Ger. em.* 245. 5—*Park.* 821. 1—*H. ox.* iii. 6. 20. —*Pet.* 46. 6—*J. B.* ii. 868. 1.

*Plant* smooth, sea-green, of a salt taste. *Leaves* fleshy. *Pouches* falling off, and leaving a cloven base behind. LINN. *Root* slender, woody, running deep into the sand, and terminated by a few rigid fibres. *Stem* woody, much branched. *Leaves* oblong wedge-shaped, sitting, deeply cut, or wing-cleft. *Flowers* pale purple. *Fruit-stalks* short. *Pouches* large and fleshy. Mr. WOODWARD. *Stem* two or three inches high, almost woody; large branches trailing, smaller ones ascending. *Leaves* wing-cleft, fleshy, smooth, the terminating segment largest. *Glands*, one within each shorter stamen, and one on the outside each pair of longer stamens. *Pouch* oblong-egg-shaped, crooked, one seed in each.

*Sea Rocket.* Sea shore, in deep sand, frequently just above high water mark. Yarmouth, Norfolk; Southwold, Suffolk. Mr. WOODWARD.—(North Shore, near Liverpool. Dr. BOSTOCK. E.)—On the sandy den at Teignmouth, plentiful.

A. June—Oct.

**CRAM'BE.** The 4 longer filaments cloven at the top, one of the clefts bearing the anther: *seed-vessel* simple, globular, deciduous.

**C.** Leaves (glaucous, waved; E.) they and the stem *maritima* smooth.

*E. bot.* 924—*Fl. dan.* 316—*Ger.* 248. 16—*Pet.* 48. 12—*Ger. em.* 315. 15—*H. ox.* iii. 2. 16—*Park.* 270. 4. *b.*—*Lob. adv.* 92. and *ic.* i. 245—*Park.* 270. 4. *a.*—*Ger.* 248. 15—*J. B.* ii. 830. 2; (not *Kniph.* 10, *C. maritima.*)

This plant lurks as it were under the disguise of a *Brassica*, as is evident from its fructification being so distinct. LINN. Whole *plant* smooth. *Stems* many, spreading, and much branched. *Root-leaves* on leaf-stalks, very large, spreading wide on the ground, variously wavy, jagged, and indented, smooth, sea-



green, sometimes tinged with purple. *Stem-leaves* sitting. *Fruit-stalks* long. *Flowers* white. *Pouch* at first egg-shaped, terminated by a blunt summit, afterwards nearly globular. Mr. WOODWARD. *Leaves* fleshy, glaucous, indented and curled; upper ones nearly sitting and egg-shaped. *Blossom* large, white, but the claws of the petals and the filaments often purple.

*Sea Colewort. Cliff, or Sea Kale.* Sandy sea shores. Roosebeck in Low Furness, Lancashire. Mr. WOODWARD.—Near Mevagissey, Cornwall. Mr. WATT.—(Between Dunwich and Southwood on the Suffolk coast, abundantly. Mr. WOODWARD. E.)—Chalk cliffs at Weymouth and Lulworth cove, and many other places on that coast.—(On the cliffs of the Dover coast. Abundant on the sand hills of the Lincolnshire coast. Sir J. BANKS.—Also at Mundesley, Norfolk. Dr. SMITH. E.)

P. May—June.\*

There is one variety with jagged leaves, and another with yellowish blossoms.

**I'SATIS.** *Pouch* or *seed-vessel* simple, oval-spear-shaped, compressed, 1-celled, 1-seeded, crowned by the style.

tincto'ria.

I. Root-leaves scolloped; stem-leaves arrow-shaped; pouches oblong, (smooth. E.)

Cultivated.—*Fuchs.* 332—*J. B.* ii. 909. 2—*Matth.* 635—*Dod.* 79. 2—*Lob. obs.* 190. 1. and *ic.* i. 352. 1—*Ger. em.* 491. 2—*Pet.* 48. 9.

Wild.—*E. bot.* 97—*Fuchs.* 331—*J. B.* ii. 909. 1—*Matth.* 634—*Dod.* 79. 1—*Lob. obs.* 189. and *ic.* i. 351. 2—*Ger. em.* 491. 1—*Park.* 600. 3—*Trag.* 256—*Ger.* 394—*H. ox.* iii. 15. 10 and 11—*Blackw.* 246—*Lonic.* i. 149. 1.

*Pouches* on slender fruit-stalks, hanging down. Mr. WOODWARD. *Stem* branched, woody, (leafy, smooth, paniced. E.) *Leaves* (glaucous. E.) the uppermost strap-spear-shaped. *Calyx* yellow. *Petals* notched at the end, yellow. *Pouches* chesnut-coloured, (shining. E.)

\* The young and tender leaves are boiled as cabbage, but when full grown they occasion giddiness. (It is frequently cultivated in gardens, and may be readily protected from the severest cold by a covering of sand. E.) Horses, cows, goats, sheep, and swine eat it. (We are informed by Sir J. Banks, in *Bot. Guide*, that this plant has been seen in the Orkneys on sand incapable of bearing any other crop, and has been proved to furnish food for sheep. E.)

*Wood.* Cornfields, and borders of cornfields, but rather rare. HUDSON. New Barns near Ely. RELHAN. [Cultivated about Heynsham, Somersetshire. Mr. SWAYNE.—By the river Wear, near Durham. Mr. ROBSON.]—(In a field at Barton Bendish, Norfolk, where it is never known to have been cultivated. Rev. R. FORBY.—By the church at Long Reach, Kent. MARTYN.—Banks of the Wear, between Framwell Gate and New Bridges, Durham. Mr. WINCH. *Bot. Guide.* E.)

B. June—July.\*

**VEL'LA.** *Pouch* globular, partition twice as large as the valves, and extending beyond them like the bit of a spoon.

**V.** Leaves wing-cleft; pouches pendent.

an'nua.

*E. bot.* 1442—*Kniph.* 10—*Clus.* ii. 130. 1—*Lob. obs.* 102. 3, and *ic.* i. 205. 2—*Ger. em.* 247. 4—*Park.* 830. 2—*J. B.* ii. 920—*Pet.* 50. 5—*Trew. pl. rar.*

*Stem* branches, hairy. *Leaves*, segments strap-shaped, toothed, hairy. *Petals* white, with deep purple veins. *Pouches* hairy, egg-shaped, terminated by the extension of the partition. *WOODWARD.* *Pouches* set with soft prickles. *Blossom* pale yellow.

*Cress Rocket.* *Annual Cresset.* On Salisbury Plain, not far from Stonehenge. RAY.

A. June.

\* With the juice of this plant the ancient Britons painted their bodies to render themselves more terrible to their enemies. It is much used by the dyers for its blue colour, and it is the basis of many other colours. It is cultivated for their use, (particularly in Bedfordshire;—"It is sown about the beginning of March, and cropt about the beginning of May following. It is best in quality in a fair and dry summer, but most in quantity in a moist one. Then they crop it four or five times; the first crop is best. As soon as cut it is carried to the Woad mill, and ground as small as it can be, until it become fit to ball. The balls are laid on hurdles to dry, and when perfectly dried, they are ground to fine powder in the mill. Thus ground it is thrown on a floor and watered, which operation is called couching. It remains to smook and heat, turned every day, until it be perfectly dry and mouldy, called silvering. It is then weighed by the hundred, and bagged, and thus is sent for sale to the dyers. The best Woad is worth £18 per ton." In Cæsar, Vitruvius, Pliny, and other Roman historians we read of this plant under the name of *Vitrum*. Bishop GIBSON—It is cultivated on rather an extensive scale at Kesmark in Hungary, and appears equal to the best Spanish Indigo, but the price is as high. *Townson's Travels.* E.)—Cows eat it; horses, sheep, and goats refuse it.

**SUBULARIA.** *Pouch* entire, egg-shaped: *valves* egg-shaped, concave, placed across the partition: *style* shorter than the pouch.

aqua'tica. S. Leaves awl-shaped.

*Dicks. h. s.—E. bot.* 732—*Fl. dan.* 35—*H. ox.* viii. 10. 29—*Pet.* 48. 8—*Pluk.* 1883 5.

Flourishes and blossoms under water. LINN. *Leaves* green, semi-cylindrical, full of pith. *Blossom* white. *Seeds* yellow. RAY.—(*Flowers* small, on fruit-stalks. *Petals* bending inwards. *Seeds* small, egg-shaped, compressed. E.)

*Water Awhwort.* Grows under water on a gravelly bottom in Lough Neagh, Ireland, on the side next Kilmore. RAY.—Loch Tay and Loch Carran, Scotland. Mr. STUART.—In lakes on the mountains near Llanberris. HUDSON.—And Llyn y Cŵn Snowdon, PENNANT.—[Ffynnon Frêch near Snowdon. Llyn Aled, Denbighshire. Mr. GRIFFITH.—In the Loch of Clunie, Perthshire, generally in about four feet water. Mr. BROWN.]

A. June—July.

**DRA'BA.** *Pouch* entire, elliptical-oblong, rather compressed: *valves* flat, parallel to the partition: *style* none.

(aizoi'des. D. Stalk naked; leaves lanceolate, rigid, keeled, strongly fringed; petals notched, twice as long as the calyx.

*E. bot.* 1271—*Jacq. austr.* 2. t. 192—*Curt. Mag.* t. 170.

*Leaves* all from the root, forming dense round tufts, shining, strap-spear-shaped, rigid, fringed with white hairs. *Stalks* solitary, terminal, simple, naked, stiff, about an inch high. *Flowers* numerous, corymbose, bright yellow. *Calyx-leaves* elliptical, concave. *Petals* twice as long as the calyx, inversely egg-shaped, obtuse, with a slight notch. *Anthers* yellow. *Pouch* elliptical, flat, acute, crowned with an elongated style. *Fl. Brit.—E. bot.*

*Yellow Alpine Whitlow-grass.* This acquisition to the British Flora was discovered and ascertained by Dr. W. TURTON, growing abundantly on walls and rocks about Pennard Castle, near Swansea. It appears also to have been found so long ago as in the year 1795 by JOHN LUCAS, Esq. of Stout Hill, growing near Wormshead, sixteen miles west of Swansea.

P. March—April. E.)

D. Stalks naked: leaves sparingly serrated; petals divided, ver'na.

*Fl. dan* 983—*Curt. E. bot.* 586—*Thal.* 7. *E.—Walc.—Dod.* 112. 2—*Lob. obs.* 249. 2. and *ic.* i. 469. 1—*Ger. em.* 624. 1—*Park.* 556. 3—*Ger.* 499. 1—*Pet.* 48. 6 and 7—*J. B.* ii. 937. 2—*Seguier.* i. 4. 3. at p. 328—*Kniph.* 1.

Flowers hanging down at night. *Petals* divided. LINN. *Stalks* (scarcely a span high, E.) smooth after flowering, but hairy when young. *Leaves* hairy, sometimes entire. *Flowers* when in blossom in broad-topped spikes, about fifteen in each. (*Petals* white. E.) It is difficult to find the full complement of stamens when the flower is fully expanded, as they drop when the germen begins to enlarge.

Common Whitlow-grass. Nailwort. Walls and dry places, and pastures. A. March—April.\*

(D. Stems seldom entirely naked; pouches spear-shaped; hir'ta. leaves slightly toothed, fringed with simple hairs.

*E. bot.* 1338—*Fl. dan.* 143.

*Leaves* almost all root-leaves, spear-shaped, bluntly toothed, or waved at the edge, fringed, sometimes hairy underneath. *Stem* from one to three or four inches high, upright, simple, cylindrical, slightly hairy, frequently bearing one leaf towards the bottom. *Flowers* small, white. *Calyx* expanding, hairy. *Petals* scarcely notched.

The *Draba stellata* of Jacquin, to which this plant was referred in the fourth edition of this work, differs in many respects. On re-examining our specimens we now find that Mr. Brown originally named those gathered and communicated by himself *D. hirta* of Linn. and since it has been observed by Crantz, that the notch of the petal is by no means an invariable characteristic, and especially as Dr. Smith has, on comparing the Linnæan specimens, ventured a similar opinion, we do not hesitate to correct what may be considered the error of the first discoverer, Mr. Dickson. E.)

Simple-haired Whitlow-grass. *D. pyrenaica.* *Fl. dan.* Found by Mr. Dickson on rocks in the Highlands of Scotland; on Ben Lawers at great heights, and on the very summit. Mr. BROWN. P. May—June.

\* One of our earliest flowering plants. It is good as a salad. Goats, sheep, and horses eat it; cows are not fond of it; swine refuse it.



mura'lis.

D. Stem branched ; leaves egg-heart-shaped, sitting, toothed ; (pouches elliptical, blunt, flattened. E.)

*E. bot.* 912—*Col. ceph.* 272—*Barr.* 816—*Bauh. pr.* 50—*Park.* 843. 13—*H. ox.* iii. 20. 5—*J. B.* ii. 939. 1—*Pet.* 48. 5.

*Fruit-stalks* horizontal when the fruit is ripe, longer than the pouches. *Pouches* nearly slanting. *Flowers* white. LINN. *Root-leaves* entire at the base, toothed upwards. *Pouches* exactly elliptical, ending in a short blunt knob which is the summit. WOODWARD. *Stem and leaves* hairy. *Stem-leaves* rather heart-shaped. *Petals* very slightly notched at the end. (*Flowers* small, numerous, forming a long flowering bunch. E.)

*Speedwell-leaved Whitlow-grass.* Fissures of rocks, mountainous and stony pastures, especially in a calcareous soil, in Derbyshire, Yorkshire, and Westmoreland. Arncliffe Scar, near Arncliffe, Littendale and Malham Cove. CURTIS. [Near to a cotton manufactory a little below Malham Cove. Mr. CALEY.] (Wardon Hills, near Barton, Bedfordshire. Rev. Mr. ABBOT. At Old Malton, on Walls, Rev. Archdeacon PIERSON. E.)

A. April—May.

inea'na.

D. Stem-leaves numerous, hoary ; pouches oblong, slanting, nearly sitting.

*E. bot.* 388—*Fl. dan.* 130—*Pet.* 48. 3 and 4—*Pluk.* 42. 1.

*Root* a hand's breadth long. *Root-leaves* very numerous, disposed in a rose-like form, spear-shaped, cottony and somewhat hairy, entire, pointed ; *stem-leaves* often upwards of thirty, sitting, marked with a few teeth, similar to the root-leaves, but shorter, the uppermost egg-shaped, on the lower part of the stem more crowded. *Stem* a hand's breadth long, straight, hoary, clothed with leaves. *Flowers* in a small terminating corymbus, which, when the fruit is ripe, becomes a bunch. *Petals* white, slightly notched. *Pouches* upright, egg-oblong, inclining contrary to the sun, compressed, naked. *Fruit-stalks* hoary, three times shorter than the pouches, stiff, approaching to the stem. It flowers with the *Anemone*. LINN. *Stems* six to nine inches, slightly cottony, simple, crooked. *Leaves* oval-spear-shaped, a little hairy, the lower slightly, the upper deeply toothed. *Fruit-stalks* nearly as long as the pouches. *Pouches* spear-shaped, smooth, twisted, terminated by the blunt summit. Mr. WOODWARD.

*Twisted-podded Whitlow-grass*. Fissures of limestone rocks, and moist mountainous meadows, Westmoreland; and Caer-arvonshire. About Settle, (and various parts of Yorkshire. E) Rock near the summit of Ingleborough, on the west side. Mr. WOODWARD. Side of Roseberry Coppin, Yorkshire, 779. Mr. ROBSON. (Cronkley Fell. Rev. J. HARRIMAN, and on walls in Teesdale, Durham. Mr. BRUNTON. *Bot. Guide*. E.) B. May—July.

**LEPID'IUM.** *Pouch* notched at the end, compressed: valves sharply keeled; 1 seed in each cell.

(1) *Four stamens longer.*

L. Leaves winged, very entire; petals notched, smaller petra'um. than the calyx.

*E. bot.* 111—*Jacq. austr.* 131—*Col. ecphr.* 273—*Crantz.* i. 2. 4. 5.

One of our smallest and most delicate plants. LINN. *Leaves* dark green; *leaflets* elliptical, tapering each way, on leaf-stalks, very entire, thickish, from six to twelve pairs, with an odd one. *Flowers* in a close corymbus, which, as the fruit ripens, lengthens out into a bunch. *Petals* spatula-shaped, white, as long as, and narrower than the calyx; generally very entire, but sometimes slightly notched. *Pouches* broad egg-shaped, blunt, convex underneath, flat above; *valves* keeled. JACQUIN. *Stem* branched from near the root. *Leaflets* spear-shaped, horizontal, just sensibly broader than the mid-rib. ST.

*Mountain Dittander. Mountain Pepper-wort.* Rocks, walls, and stony places. St. Vincent's Rock, on the low rocks over against Goram's Chair, and on the walls about Bristol. Uphill, Somersetshire. [Dovedale. Mr. CALEY.] (On a limestone wall near Pembroke. J. ADAMS Esq. *Fl. Brit.* Rocks near the Waterfall at Burton, in Bishopdale, Wensley Dale, Yorkshire. Mr. BRUNTON. A weed on the walks at Stockpole, Pembrokeshire. Mr. MILNE. Walls of Pennard Castle, Glamorganshire. Mr. DILLWYN, in *Bot. Guide*. E.) B. March—April.

L. Leaves egg-spear-shaped, entire, serrated.

latifolium.

*Fl. dan.* 557—*E. bot.* 182—*Kniph.* 3—*Fuchs.* 484—*J. B.* ii. 940. 1—*Trag.* 83—*Matth.* 609—*Dod.* 716. 1—*Lob. obs.* 172. 4, and *ic.* i. 318. 2—*Ger. em.* 241. 2—*Park.* 855. 1—*H. ox.* iii. 21. row. 2. 1—*Blackw.* 448—*Lonic.* i. 161—*Ger.* 187. 2—*Pet.* 48. 10—*J. B.* ii. 940. 2.

*Stem* branched, zigzag, (leafy, three feet high, cylindrical, smooth. E.) *Leaves* smooth, sometimes entire, sometimes a little serrated about the middle part; lower ones unequal at the base. *Calyx* leaves purplish, white at the edge. *Pouch* hairy. *Flowers* numerous, in panicles, white, (small. *Petals* longer than the calyx, entire. E.)

*Broad-leaved Pepper-wort. Poor-man's Pepper. Common Dittander.* Meadows and pastures. Hythe, near Colchester; Heybridge, near Maldon; and marshes near Grays, in Essex; Sheringham Cliffs, Norfolk; and between Beningborough and Mitton in the North Riding of Yorkshire. [Near Seaton, plentifully. Mr. ROBSON.—Near St. Asaph. Lord LEWISHAM.]—(On the Sea walls at Bradwell, near the Sea, Essex. Mr. WOODWARD. E.) P. June—July.\*

(2) *Stamens* either 2 or 4.

rudera'le.

L. Root-leaves tooth-winged; branch-leaves strap-shaped, very entire; petals sometimes wanting.

*Trag.* 83. 2—*Fl. dan.* 184—*E. bot.* 1595—*Matth.* 608—*Dod.* 713. 1—*Lob. ic.* i. 214. 1—*Ger. em.* 262. 4—*Park.* 829—*H. ox.* iii. 19, row 2. f. 3—*Pet.* 50. 1—*Fuchs.* 307—*J. B.* ii. 914.

(*Stamens* two long and two short, some specimens have four long and two short. SEPP. and KOPP. E.) *Stem* usually crooked, woodlike, stiff, (upright, a foot high. E.) *Leaves* fleshy, smooth. *Fruit-stalks* slender. *Pouches* numerous, small, much compressed. WOODWARD. *Flowers* either with or without petals, small. *Stamens* two or four, (Dr. Smith states that he has never found this plant with petals, or with more than two stamens. E.)

*Narrow-leaved Dittander or Pepper-wort.* On rubbish, and on the sea coast. Maldon, Essex. Yarmouth, Lynn, and Clay, Norfolk; Truro, Cornwall. [Salt marshes near Yarmouth, Norfolk, plentifully. Mr. WOODWARD.—Rubbish on the side of the Severn, above Worcester. St.—Near King's Weston, below Bristol.] The plant smells like a fox.

B. June—Aug.

\* This is one of the acrid antiscorbutics, and was formerly used in the place of *Horse-raddish*. An infusion of it vomits.

**THLAS'PI.** *Pouch* inversely heart-shaped, notched at the end; valves like a keeled boat, often winged with a border; cells many-seeded.

**T.** Pouches round and flat, (smooth; E.) leaves oblong, arven'se. toothed, smooth.

*E. bot.* 1659—*Ludw.* 173—*Fl. dan.* 793—*Blackw.* 68—*Matth.* 567—*Ger.* 204. 1—*J. B.* ii. 923—*Sheldr.* 105—*Dod.* 712—*Lob. obs.* 108. 1, and *ic.* 1. 212. 2—*Ger. em.* 262. 1—*Park.* 836. 1—*H. ox.* iii. 17. 12—*Pet.* 50. 9.

*Leaves* arrow-shaped at the base, embracing the stem. *Pouches* deeply notched. **Mr. Woodward.** *Stem* about two feet high, with seven or eight membranaceous edges. *Seeds* spear-shaped, but compressed, hanging or pointing downwards. *Blossom* white, small.

*Penny-cress.* Cornfields, especially in a muddy soil.

A. June—July\*

**T.** Pouches roundish, (sprinkled with glandular dots; E.) campes'tre. leaves arrow-shaped, toothed, hoary.

*Curt.—E. bot.* 1385—*Ger.* 204. 2—*Pet.* 50. 7—*Fuchs.* 306—*J. B.* ii. 921. 1—*Trag.* 87.

*Leaves* very soft, and almost velvety. **LINN.** *Stems* many from the same root, thickly clothed with leaves. *Leaves* growing without order. In some situations it is green and slightly hairy, in others very downy and white, and is then the *Th. hirtum* of Hudson. **WOODWARD.** *Stem* clothed with leaves, undivided except at the top, where it separates into seven or eight branches, above the branches naked. *Root-leaves* spear-egg-shaped, on long flat leaf-stalks, sometimes wing-cleft at the base. *Fruit-stalks* horizontal. *Pouches* nearly heart-shaped, smooth, convex on the lower, and concave on the upper surface. *Blossom* white. *Cups* with brown spots. (Dr. Smith remarks that the pouch may be found either dotted, quite smooth, or hairy. E.)

*Mithridate Mustard.* *Bastard Cress.* Cornfields, and sunny situations, in a clayey and sandy soil. B. June—July.

**Var. 2.** Leaves smooth, scarcely serrated; those at the root not indented.

\* The whole plant has something of a garlic flavour. The seeds have the acrimony of mustard. When cows eat it their milk acquires a bad taste.—Cows, goats, and swine eat it. Sheep and horses refuse it.



TETRADYNAMIA. SILICULOSA. *Thlaspi*.

*Blackw.* 407—*Dod.* 713. 3—*Lob. obs.* 108. 2, and *ic.* i. 213. 1—*Ger. em.* 262. 2—*Park.* 836. 2—*Pet.* 50. 8—*H. ox.* iii. 17. 14—*Matth.* 566.

Leaves smooth, broader than var. 1, and not so tapering to point. Pouches smooth. RAY.

*Thlaspi vaccariæ folio glabrum.* R. Syn. 305. Between Beccles and Bungay, Suffolk. RAY. (On Willington Ballast Hills, Durham. Mr. WINCH, in *Bot. Guide.* E.)

Var. 3. *cottony*. Pouches, stem and leaves cottony.

This has been supposed to be the *Thlaspi hirtum* of LINN. but I am of opinion with Mr. Woodward, that it is only a variety of the *T. campestre*. It is like soft velvet to the touch, nor are the pouches properly rough with hairs, (hirsute) they are only cottony in a slight degree. It differs most obviously from the *T. campestre*, in the root-leaves being entire, and on very long leaf-stalks. It is about 10 or 12 inches high, but the Linnæan *T. hirtum* is not above half so high, and has root-leaves inversely-egg-shaped, and broad at the end, but in our plant they are strap-spear-shaped.

(Notwithstanding the above observations, and the more recent opinion of Dr. Smith, truth obliges us to acknowledge that on comparing our specimens with the figure of *T. hirtum* of Linn. p. 1803 of English Botany, we are decidedly of opinion that our Dartmoor plants are the same; nor do we observe any invariable specific difference between this plant and the less rare *T. campestre*. E.)

*Thlaspi hirtum* of Hudson and other English authors, (probably also of Linnæus. E.) [On Dartmoor.] May—June.

*perfoliatum*. T. Pouches inversely-heart-shaped; stem-leaves heart-shaped, smooth, somewhat toothed; petals as long as the calyx; stem branched.

*Dicks. h. s.—Jacq. austr.* 337—*E. bot.* 2354—*Col. ecphr.* 276 2—*Tab. hist.* 851—*Pet.* 50. 12.

Stem smooth. Blossom white, hardly larger than the calyx. Stamens longer than the flower; white. Anthers yellowish. Pouch like that of the common Shepherd's-purse. LINN. Seeds 4 in each cell. POLLICH. Stem upright, simple, but in gardens and in a rich soil branched. Lowermost leaves egg-shaped, on leaf-stalks. About eight inches high. Leaves glaucous green, embracing the stem.

*Perfoliate Shepherd's-purse.* *Thlaspi alpestre.* HUDS. ed. ii. Stone pits between Witney and Burford, and on Burford Downs, Oxfordshire.—(Pastures about the ebbing and flowing well, two

miles from Grislewick, Yorkshire, in stony ground among the grass; together with *T. alpestre*. MERRETT.—Common in the Lime-stone pastures of Cumberland, and other counties.—Frequent in Worcestershire. E.) A. April—May.

*T. Pouches* inversely-heart-shaped; leaves smooth; root-leaves battledore-shaped, very entire; stem-leaves embracing the stem; petals longer than the calyx.

*Jacq. austr.* 237—*Col. ecphr.* 276. 1—*J. B.* ii. 926—*Tabern.* 852. 1—*Ger. em.* 268, right hand fig.—*Clus.* ii. 131. 2.

*Root* creeping. RAY. *Root-leaves* large, smooth, tapering down into leaf-stalks. Mr. WOODWARD. *Seeds* only one or two in each cell. *E. bot.* *Flowers* large, white. *Anthers* yellow.

*Thlaspi foliis Globulariæ*. RAY. *Syn.* 305. 4. (Dr. Smith refers this plant to his *T. alpestre* as well as the following species. E.) In pastures about the ebbing and flowing well, a mile from Settle in Yorkshire, towards Ingleborough; also in many places of the mountainous pastures between Settle and Malham. RAY. I found it on the road from Settle to Malham, within about half a mile of the Tarn. CURTIS. [On Ingleborough. Mr. WOODWARD.] P. June—July.

*T. Pouch* inversely heart-shaped; leaves glaucous, somewhat toothed, embracing the stem; petals as long as the calyx; seeds numerous.

*E. bot.* 81—*Clus.* ii. 131. 3—*Tabern.* 854. 19—*Ger. em.* 268. 7—*Ger.* 210. 7—*Park.* 837. 8—*Thlaspi perfoliatum minus*. RAY *Syn.* 305. 6.

*Root-leaves* forming a tuft. *Stem* single, central, flowering early; other lateral stems afterwards shoot up, flowering later. *Petals* white, about the length of the calyx. *Anthers* purplish. *Seeds* three or four in each cell. *E. bot.* Dr. Smith observes, that Mr. Hudson's *T. montanum* is certainly the *T. alpestre* of Linn. and that his *T. alpestre* is the *T. perfoliatum* of Linn. Adding, and justly too, that the Botan. Arr. ed. ii. misled by this authority, had still further increased the confusion.

The present arrangement of these plants has been made without any view to Mr. Hudson's opinions, and is founded on the indisputable veracity, and well known accuracy of Ray, who, in his Synopsis, p. 305, No. 4 and 6, records two species, referring to the same figures which Linnæus in the Sp. Pl. has quoted to the *T. montanum*, and *T. alpestre*, so that I must believe that

Ray had seen both those species. He also particularly notices the creeping root of the *T. montanum*, a circumstance so inapplicable to the *T. alpestre*, that Dr. Smith is obliged to suppose this to be a mistake.

I am ready to allow that the Oxfordshire plants of Bobart may be the *T. perfoliatum*, but think it highly probable that those of Merret and Nicholson must have been the true *T. alpestre*, or else Ray and Linnæus would hardly have agreed in quoting the same synonyms.—Pastures above the ebbing and flowing well, two miles from Gristlewick, in stony ground among the grass. Yorkshire. MERRET.—On most limestone pastures in Westmoreland and Cumberland. NICHOLSON.—Limestone rocks at Matlock. Dr. SMITH.—(About Pont Nedd Vachn and Aberpergam, Glamorganshire. Mr. DILLWYN; also near Whince Bridge, Durham. Rev. J. HARRIMAN. *Bot. Guide*.—By the side of a dingle, called Nant Bwlch yr Hiarn, about a mile from Llanrwst bridge and not more than twenty yards from the turnpike road leading to Conway. Mr. GRIFFITH. E.)  
B. July.

Bursa  
pastoris.

T. (Plant hairy; E.) pouches compressed, triangularly inversely heart-shaped, smooth, without a border; root-leaves wing-cleft.

Ludw. 186—Curt.—E. bot. 1485—Blackw. 5—Walc. 5—Dod. 103. 1—Lob. obs. 110. 1, and ic. i. 221. 1—Ger. em. 276. 1—H. or. iii. 20. row 1. 2—Pet. 49. 4, 5, 6, and 7—Ger. 214. 1—Fuchs. 611—Trag. 215—J. B. ii. 936—Lonic. i. 139. 1—Park. 866. 1—Matth. 569.

Root-leaves, sometimes entire. ST. In cultivated ground the segments broader, on walls and in dry situations more deeply divided, and the segments much narrower. CURT. Leaves fringed with fine hairs. Stem-leaves, the upper entire, strap-spear-shaped, embracing the stem. Bunches long, flattened at the top, terminating. Calyx hairy. Petals entire, white. Summit circular, fringed, concave. Anthers a little woolly. Germen egg-shaped, compressed, with a channel down the middle.

This plant is a strong instance of the influence of soil and situation, for it grows almost every where, and sometimes is not more than two inches high when it flowers and perfects its seeds; whilst in other situations it attains the height of two or three feet. LINN. The plants of this genus begin to flower long before they have attained their full size, the flowers at first forming a corymbus, but this after a while shoots out and assumes the form of a long spike-like bunch. The stem also, at first simple, in time becomes branched, the first branches issuing

from its upper part. (It varies in a barren chalky soil, with all the leaves, and the stem simple, as represented in the last figure of Petiver above cited. E.)

*Common Shepherd's-Purse.* Among rubbish, roadsides, walls, cornfields, and gravel walks. A. March—Sept.

**COCHLEARIA.** *Pouch* notched at the end, turgid, rough, many-seeded: valves bulging, blunt.

C. Root-leaves heart-circular; stem-leaves oblong, a little officinalis. indented; fruit globular.

*E. bot.* 551—*Kniph.* 3—*Ludw.* 133—*Fl. dan.* 135—*Blackw.* 227—*Woodv.* 29—*Pet.* 49. 1—*J. B.* ii. 942—*Dod.* 594. 1—*Lob. obs.* 156. 4, and *ic.* i. 293. 2—*Ger. em.* 401. 1—*Park.* 283. 2—*H. ox.* iii. 20. 1—*Ger.* 324. 1.

*Root-leaves* kidney-shaped, entire, veined, on long leaf-stalks. *Stem-leaves* oblong, sitting, slightly toothed, and in a mountain specimen much larger than the root-leaves. *Fruit-stalks* long, slender, expanding, sometimes bent back. *Pouch*, style hardly discernable. Mr. WOODWARD. *Stem* angular. *Root-leaves* on long leaf-stalks heart-kidney-shaped, fleshy. *Stem-leaves* sitting, sometimes halberd-shaped, the lower sometimes on short broad leaf-stalks. *Petals* fleshy, clear white. *Claws* greenish. *Pouch* either not notched at the end or scarcely sensibly so, sometimes pointed by the style, smooth. *Partition* double. *Seeds* rough. (Dr. Smith remarks that this plant may be distinguished from either *C. anglica* or *C. danica*, by its *pouch*, which is globular, very slightly rugose, and scarcely perceptibly veined.

Var. 2. Scarcely differs from the preceding, except in its diminutive size, and style but little elongated. This plant has been considered by various botanists as either belonging to this species or distinct from it. Dr. Withering, after much research and actual observation, concluded it to be only a mountainous variety of *C. officinalis*, yet Mr. Griffith, who had cultivated it for many years, will not allow it to be an annual, and Miller declares it to be biennial. It is the *C. groenlandica* of With. Ed. 4. but not so of Linnæus, as appears to have been clearly ascertained by Dr. Smith.

Common on the mountains about Llanberris, Caernarvonshire, HUDSON. Mr. BINGLEY. E.)



## TETRADYNAMIA. SILICULOSA. Cochlearia.

*Scurvy-grass.* Sea shores, common, also on inland mountains in Derbyshire, Yorkshire, Scotland, and Wales.

A. April—May.\*

The following metamorphosis of this Proteus-like plant, is more extraordinary than any other thing of the kind which has occurred to my observation.

*Root* woody, sending out fibres. *Stem* none. *Leaf-stalks* lying close on the ground, springing from the crown of the root, very slender, about one or one and a half inch long. *Leaves* smooth, entire, varying from circular to heart-shaped, sometimes with a single indentation on each side, about the eighth of an inch in diameter. *Fruit-stalks* from the crown of the root, very slender, leafless, one to one and a half inch long, supporting a single flower. *Blossom* petals reflected, very much larger than the calyx, of a bright rich lilac-colour, streaked with deeper purple lines. *Pouch* circular heart-shaped, two-celled, with four rough seeds in each, placed alternately, on short pedicles.

This elegant little plant grows in a rich soil in various places about Lisbon, but more particularly on the shores of the Tagus; flowering in January and February, and I never saw it there assume any other appearance, so that concluding it to be a *Cochlearia*, I fully concurred in opinion with my good friend the Abbé Corrêa de Sêrra that it was a species unknown to the Linnean School. Some seeds sown in my garden at Edgbaston in the Autumn of 1793, produced plants which flowered in March 1794. These agreed in every respect with the Portugal plants. In April the colour of the petals was more dilute, the whole plant larger, and much resembling the *C. danica*, as represented in the Fl. dan. t. 100. In the month of May the petals became entirely white, and much smaller than those which had flowered in March: the flowers formed a corymbus, the stems grew to a foot or more in height, bearing angular leaves, and in every respect corresponding with the ordinary *C. officinalis*.

(The real *C. groenlandica* of Linnæus is said to have been found by Mr. Don on the mountains of Clova in Angus-

\* Notwithstanding this is a native of the sea coast, it is cultivated in gardens without any sensible alteration of its properties. It possesses a considerable degree of acrimony, and this acrimony seems to reside in a very subtle essential oil. Its effects as an anti-scorbutic are universally known; and it is a powerful remedy in the pituitous asthma, and in what Sydenham calls the scorbutic rheumatism. A distilled water, and a conserve, are prepared from the leaves, and its juice is prescribed along with that of oranges, by the name of anti-scorbutic juices. It may be eaten as a sallad. Cows eat it. Horses, goats, and sheep refuse it.

shire and Loch-negare, but it appears doubtful whether even this may not prove a variety of *C. officinalis*. vid. Lin. Trans. v. x. p. 344. E.)

C. All the leaves trowel-shaped, on leaf-stalks, with halberd-shaped angles at the base. da'nica.

*E. bot.* 696—*Fl. dan.* 100—*Lob. obs.* 338. 1, and *ic.* i. 615. 2—*Ger. em.* 271—*Park.* 848. 1—*J. B.* ii. 939. 2—*H. or.* iii. 20. 3—*Pet.* 49. 3.

*Stem* not branched as in *C. officinalis*. *Suckers* trailing. All the *leaves* halberd-shaped, or egg-shaped, with an angle on each side of the base. *Leaf-stalks* not toothed at the base, or embracing the stem. *Capsules* egg-shaped. LINN. *Stems* numerous. Mr. WOODWARD. *Blossom* white. (*Pouch* elliptical, reticularly veined, *Fl. Brit.* E.)

*Danish Scurvy-grass.* *Thlaspi hederaceum.* *Ger. em.* 271. *Park.* 848. (ST.) Sea shores. Isle of Walney, Lancashire, and near Llandrick church, Anglesea. RAY. [Wells, Norfolk. Mr. CROWE.] (Castle Walls, Shrewsbury Mr. A. AIKIN. About St. Anne's Light-house and other places on the east of Pembroke-shire. Mr. DILLWYN. Coal-clough, Northumberland, Mr. WINCH; and coast North of Tynemouth. Mr. THORNHILL. Blackpool, Lancashire. Rev. W. WOOD. Abundant on the rocks about the Mumbles Light House, and in similar situations on the Glamorganshire Coast. Mr. DILLWYN. Wellington Quay, Durham. Mr. WINCH. *Bot. Guide.* Purbeck Cliffs. PULTENEY. E.) A. May—June.

C. (Root-leaves heart-egg-shaped, entire; those on the stem spear-shaped, toothed; fruit elliptical, reticulated with veins. E.) an'glica.

*E. bot.* 552—*Fl. dan.* 329—*Blackw.* 218—*Dod.* 594. 2—*Lob. obs.* 157. 1, and *ic.* i. 294. 1—*Ger. em.* 401. 2—*Park.* 285. 1.—*H. or.* iii. 20. row 3. 2—*Ger.* 324. 2.

The *root-leaves* are generally entire, the *stem-leaves* generally indented, but sometimes they are all entire, or all indented, though I believe the primary root-leaves are always entire. *Pouches* roundish, fleshy, much larger than those of *C. officinalis*, and terminated by a longer style about two-thirds of a line in length. WOODWARD. (This species likewise varies in the size and shape of its parts, but is always

smooth and rather fleshy, generally smaller than *C. officinalis*. *Pouches* all over strongly marked with a net work of prominent veins, scarcely at all to be perceived in those of the more common kind. *E. bot. E.*)

*Spoonwort. English Scurvy-grass.* Sea shores, in muddy soil. Salt marshes, Kent and Essex, where the salt water overflows them every tide. MILLER.—[At Yarmouth, Mr. CROWE, and on the coast abundantly. Mr. WOODWARD.—Isle of Wight, and King's Weston. ST.—River banks near the Hotwells, Bristol. Mr. SWAYNE.]

A. May.

*Armora'cia.* *C.* Root-leaves spear-shaped, scolloped, stem-leaves snipt,

*E. bot.* 2323—*Woodv.* 150—*Blackw.* 415—*Fuchs.* 660—*J. B.* ii. 852—*Lonic.* i. 160. 1—*Trag.* 734—*Dod.* 678. 1—*Lob. obs.* 173, and *ic.* i. 320. 1—*Ger. em.* 241. 1—*Park.* 860—*Pet.* 49. 11—*Ger.* 187. 1—*Matth.* 442—*H. ox.* iii. 7. row 3. 2.

(Root very long, cylindrical, acrid. Stem two feet high, upright, leafy. Root-leaves very large, on leaf-stalks, oblong, crenate, sometimes winged, veined; stemleaves sessile, spear-shaped, either cut or very entire. Blossom white. Pouch elliptical, with a very short style, and large stigma. Seldom perfects seeds. *Fl. Brit. E.*)

*Horse-raddish.* Sides of ditches, banks of rivers. About Alnwick, Northumberland; banks of Skipton-beck, and elsewhere in Bolland, in Craven. RAY.—(In great plenty above Hutton Bay, parish of Orphir, Orkney. *Month. Mag.* v. 28. p. 462. *E.*)

P. May.\*

Var. 2. Root-leaves deeply wing-cleft. St.

*Pet.* 49. 12.

*Jagged Horse-raddish.* Flowers white.

(*CORO'NOPUS.* *Pouch* kidney-shaped, compressed, rough; cells without valves, single-seeded. *Fl. Brit. E.*)

\* The root scraped is in common use at our tables as a condiment for fish, roast beef, &c. and it is used for many other culinary purposes. An infusion of it in cold milk, makes one of the safest and best cosmetics. In paralytic and dropsical cases it is an useful stimulant and diuretic. A strong infusion of it excites vomiting. A distilled water is prepared from it. Horses, cows, goats, sheep, and swine refuse it. The *Papilio Brassicae* feeds upon the several species.

- C. Leaves wing-cleft; stem depressed; (corymbus with few flowers. E.) Ruellii.

*Fl. dan.* 202—*E. bot.* 1660—*Blackw.* 120—*Ger.* 340. 2—*Dod.* 110—*Lob. obs.* 240. 1, and *ic.* i. 438. 1—*Ger. em.* 427. 2—*Pet.* 50. 6—*H. ox.* iii. 19. 9—*Tourn.* 102—*J. B.* ii. 919. 2—*Matth.* 851—*Park.* 502. 5—*Park.* 502. 2.

*Stem* and *root-leaves* prostrate, longer than the branches; *leaflets* cut along the fore edge, very entire along the back edge, the terminating one strap-shaped, very entire. *Pouch* kidney-heart-shaped, depressed on the sides, with furrows and sharp ridges running towards the edge, where they run out into sharpish points; one of the cells not unfrequently empty, in which case the fertile seed expands, filling up almost the whole of the seed-vessel. *St.* *Bunches* from the bosom of the leaves. *Blossom* white, small.

*Swine's Cress.* *Cochlearia Coronopus.* LINN. WITH. Ed. 4. &c. Cornfields; rubbish; road sides. A. June—Aug.

- C. Stem trailing, hairy; leaves with winged clefts; fruit didyma. double. (E. bot.) (Corymbus with many flowers. E.)

*E. bot.* 248.

*Stem* a foot high. *Leaves* winged; *leaflets* sitting, alternate, spear-shaped, toothed on the fore edge. *Bunches* from the bosom of the leaves, as long as the leaves. *Flowers* very minute. *Capsules* roundish, double, somewhat wrinkled. An intermediate plant between the *Cochlearice* and *Lepidia.* LINN. *Stamens* two, or four. *Flowers* white.

*Procumbent Dittander.* *Lepidium anglicum.* HUDS. *Lepidium didymum.* WITH. Ed. 4. and *E. bot.* On rubbish about Exeter; and Truro and Penryn, Cornwall. [Near Exeter. Mr. NEWBERRY.]—(At Dale, near Milford Haven. Mr. ADAMS. E.) A. June—July.

IBERIS. *Bloss.* unequal, the two outer petals larger: *pouch* roundish, compressed: *partition* placed crosswise; 1 seed in each cell.

- I. Herbaceous; leaves spear-shaped, acute, somewhat amara. toothed; flowers spike-like, in bunches.



*E. bot.* 50. 2-*Kriph.* 9-*Riv. tetr.* 109, *Thlaspid. fol. Nasturtii*-*J. B.* ii. 925. 1-*Ger.* 205. 6-*Ger. em.* 263. 5. on the right hand.

Similar to *I. umbellata*, (the common *Candy-tuft*) but smaller. LINN. *Leaves* strap-spear-shaped, generally with one or two teeth on each side. *Flowers* in a terminating spike-like bunch; white. (Whole plant smooth, bitter. *Stems* spreading, branched, leafy. *Leaves* rather fleshy. *Pouch* sharply notched at the end. E.)

*Bitter Candy-tuft.* Cornfields about Henley and other places in Oxfordshire. HUDSON. Common about Wallingford, Berks. Dr. SMITH. [Road side between Cheadle and Oakmoore; on a common. Rev. J. H. DICKENSON.]

A. June—July.

*nudicaulis*. I. Herbaceous; leaves wing-cleft; stem naked, simple.

*Dicks. h. s.*-*Curt.-Dod.* 103. 2-*Lob. ic.* i. 221. 2-*Ger. em.* 276. 2-*Park.* 866. 3-*J. B.* ii. 937. 1-*Pet.* 50. 2-*Fl. dan.* 323-*Ger.* 194. 3-*Ger. em.* 251. 4-*Park.* 828. 7-*Magn. bot.* 187-*H. ox.* iii. 19. 5.

*Stems* numerous, with usually one sitting leaf below the middle. *Root-leaves* spread on the ground in a circle, smooth, with winged clefts, the terminating lobe large. *Pouches* somewhat convex on one side, flat on the other, bordered with a projecting margin, and marked with a perpendicular line, which is the edge of the partition. WOODWARD. From two to four inches high. *Leaf-stalks* as long as the leaves. *Flowers* small, white, in a terminating spike-like bunch.

*Rock Cress.* *Naked-stalked Candy-tuft.* Gravelly places and very barren heaths. Near Hampton Court, Richmond and Barnes Commons. RAY. Putney Heath. MILLER. Old stone pits by the side of Pensham Field, Worcestershire. NASH. [About Norwich, frequent. Mr. PITCHFORD.—and Bungay, Suffolk. Mr. WOODWARD.—Between Corby Castle and Carlisle. St. Harmer Hill, near Salop. Mr. AIKIN.]

A. May—July.

## SILIQUOSA.

DENTA'RIA. *Pod* cylindrical, bordering, opening with a jerk: valves rolling back, rather shorter than the sponge-like partition: *summit* notched: *calyx* close.

D. Lower-leaves winged; the upper ones undivided. *bulbifera*.

*E. bot.* 309—*Fl. dan* 361—*Clus.* ii. 121. 1—*Lob. ic.* i. 687. 2—*Ger. em.* 984. 1—*Park.* 620. 1—*Ger.* 833. 1.

(Root creeping, toothed, fleshy, white. Stem upright, a foot and a half high, undivided, leafy, naked at the bottom. *Corymbus* terminating, solitary. Blossoms large pale purple. *Fl. Brit. E.*) *Bulbs* produced from the bosom of the leaves as in the *Lilium bulbiferum*, and the fruit in the like manner abortive. LINN. Stem simple. Leaves, the lower with three pair of leaflets, and an odd one confluent with the pair beneath; leaflets bluntly spear-shaped, serrated. Flowers flesh-coloured. *Bulbs* from the bosom of the upper leaves, scaly, which falling off take root, and produce new plants. It rarely produces seeds. Mr. WOODWARD. *Bulbs* black.

*Bulbiferous Coral-wort.* Woods and shady places, High-reede and Foxholes Woods near Mayfield, Sussex. PARKINSON. Old Park Wood, near Harefield. BLACKSTONE. Woods between Beconsfield and Wickham. HUDSON. (On high rocks at Tunbridge Wells. Rev. Mr. BALE, and Mr. DICKSON. E.) P. April—May.

CARDA'MINE. Pod long, 2-edged, opening with a jerk: valves rolling back, parallel to the membranaceous partition: summit a knob, entire: calyx rather open.

(1) *Leaves undivided.*

C. Leaves egg-shaped, very entire, (on long leaf-stalks. E.) *bellidifolia*.

*Fl. dan.* 20—*Jacq. misc.* i. 17. 2—*E. bot.* 2355—*Fl. lapp.* 9. 2.

Root-leaves on leaf-stalks. In its larger growth there are leaves on the stem, but rarely with leaf-stalks. Flowers white. (Stem scarcely two inches high, upright, undivided, smooth, with few leaves. *Corymbus* terminal, of few flowers. Petals erect, twice the length of the calyx. Pod strap-shaped, blunt, smooth. *Fl. Brit. E.*)

*Daisy-leaved Ladies'-smock.* Mr. GRIFFITH informs me that the *Turritis hirsuta* now grows in the places near Denbigh where the Cardamine was said to grow. (Such is the case with all the stations of this plant reported by the old authors. It would seem the attention of Botanists should rather be di-

rected more Northward. E.) The specimens before me were gathered wild in Scotland, and sent me by Mr. MILNE. (Of these being genuine there can be no doubt. E.) P. Aug.

(2) *Leaves winged.*

impatiens. C. Leaves winged; leaflets spear-shaped, toothed or cut; stipulæ fringed. (E. bot.)

*E. bot.* 80—*J. B.* ii, 886. 1—*Barr.* 155—*Ger. em.* 260. 7—*Park.* 1241. 4—*H. ox.* iii. 4. 1—*Pet.* 47. 7—*Barr.* 155.

*Leaflets* of the upper leaves nearly entire, of the middle ones toothed, of the lower ones considerably cut and jagged. *Stipulæ* crescent-shaped, half embracing the stem. *Petals* small, white, deciduous; sometimes wanting. (The *stem* is not unfrequently branched, usually a foot and a half high, rather crooked. E.)

*Impatient Ladies'-smock.* Mountainous meadows on the sides of rivulets, on rocks and moist stony places, in Derbyshire, and Westmoreland. Giggleswick Scar. [Rocks opposite Matlock Bath, Derbyshire. Mr. WOODWARD.—On loose earth thrown up from a quarry above Lench Ford, nearly opposite Shrawley, and in Clifly Wood near Hanley, Worcestershire. ST.]—(Plentiful in a hedge near the Parsonage at Slinfold, Sussex. Mr. BORRER in *Bot. Guide.* E.) A. May—June.

hirsuta. C. Leaves winged, leaflets opposite; stamens 4.

*E. bot.* 491—*Cam. epit.* 270—*Scop.* 38, at ii. p. 21—*Barr.* 455—*J. B.* ii, 888.

*Stems* generally numerous, the central one upright, the rest declining, hairy. *Root-leaves* very numerous, forming a circle on the ground; *leaflets* roundish, three or four pair, with an odd one much larger; *stem-leaves*, two or three on each stem, roundish or spear-shaped. Mr. WOODWARD. *Stems* from three to five inches high. *Leaflets* opposite, mostly three pair, the odd one at the end larger and more circular. (This plant varies much in size and degree of hairiness. *Stems* branched, more or less angular, leafy. *Flowers* white, small. *Pod* hairy. E.)

*Hairy-leaved Ladies'-smock.* *Cardamine hirsuta* β HUDS. *Cardamine minor arvensis.* D. LHWYD, in R. Syn. 300 n. 4. —(*Cardamine impatientis altera hirsutior.* R. Syn. 300, is *C. flexuosa.*) [Gravelly soil, on the driest banks as well as in moist places and by the sides of rivulets and springs. Common in Cornwall. Mr. GIDDY, and Mr. STACKHOUSE; and in

Scotland. Dr. HOPE. In Warwickshire and Staffordshire,  
common.] A. March—June.\*

C. Stem zig-zag; leaflets toothed, mostly alternate, un-flexuosa.  
equal at the base.

Curt. 277—Fl. dan. 735—Walc. *C. hirsuta*.

Stem eight to twelve inches high, stiff, angular, ribbed, zig-zag, being bent at the setting off of every leaf or branch. Leaves, root-leaves lying in a circle on the ground, on leaf-stalks. Leaflets five or six pairs, with an odd one at the end: egg-shaped, irregularly toothed, unequal at the base. Stem-leaves alternate, irregularly sessile. Leaflets three to five pairs, with an odd one which is larger; some sessile, others on short leaf-stalks, irregularly toothed. Fruit-stalks cylindrical, but compressed; slanting. Calyx half the length of the blossom: generally purplish. Blossom petals white, rounded at the end. Stamens six, longer than the blossom. Anthers yellow. Pistils unmit pale green. Seed-vessels, pod straight, nearly upright, cylindrical, but compressed. Seeds six on each side of the partition. Plant somewhat hairy; hairs few, soft, white, mostly on the lower part of the stem and the edges of the leaves. Flowers in a terminating corymbus, which in time shoots out in form of a spike-like bunch; and the full grown plants sometimes put forth axillary bunches.

This plant has been imagined by some to be only a var. of the *C. hirsuta*, but it has more generally been taken for the *C. parviflora* of Linnæus, whilst others have supposed those two species only accidental varieties. It differs from the former in having uniformly six stamens, and from the latter in being hairy, in its stamens being longer than the blossom, and in its fruit-stalks being slanting upwards, not horizontal. It does not appear that the *C. parviflora* has yet been found in this Island. On comparing this plant with the other species, we find it in general appearance differing from either *C. hirsuta*, or *C. parviflora*, and have not yet found sufficient reason to induce us to relinquish the idea of the Author. E.)

Zig-zag Ladies'-smock. *C. parviflora*. Bot. arr. ed. ii. *Cardamine hirsuta*, WEBER, CURTIS, WALCOT, HUDS. Fl. Brit. *Cardamine impatiens altera hirsutior*. R. Syn. 360. Ditches, woods, shady, wet, and boggy places. [Rookery at Edgbaston, near Birmingham, and in ditches at the top of the Pool.] A. May—July.

\* The young leaves make a good salad. It is warm in the mouth, much resembling Water Cress in taste. ST.



praten'sis.

C. Leaflets of the root-leaves roundish, those of the stem-leaves spear-shaped; very entire.

*Curt.* 175-*E. bot.* 776-*Kniph.* 12-*Fl. dan.* 1039-*Woodv.* 30-*Walc.-Sheldr.* 109-*Blackw.* 223-*Lob. obs.* 106. 2, and *ic.* i. 210. 1-*Ger. em.* 259. 1-*Ger.* 201. 1-*Clus.* ii. 128. 2-*Dod.* 592. 2-*Lob. obs.* 106. 3, and *ic.* i. 210. 2-*Ger. em.* 259. 2-*Ger.* 201. 2-*Park.* 826. 2, and 1239. *f.* 4-*H. or.* iii. 4. 7-*Pet.* 47. 5-*Lonic.* i. 159. 5-*Fuchs.* 325-*J. B.* ii. 889. 1-*Trag.* 83. 1.

Leaflets of the lower stem-leaves egg-shaped, higher up spear-shaped, those of the upper strap-shaped. **WOODWARD.** *Flowers* large, paler or deeper purplish red. (Stem upright, stiff, about a foot high, bearing a handsome terminating corymbus.

Dr. Smith remarks that he has sometimes observed, in shady situations, the root-leaves putting forth buds or bulbs, the embryos of new plants; hence he would infer an affinity between this plant and *Dentaria bulbifera*, E.)

*Meadow Ladies'-smock. Cuckow Flower.* Meadows and moist pastures. P. A. May.\*

Var. 2. Double-flowered.

This is a beautiful plant in the garden, and is viviparous.

[Meadows about Ross Hall, near Salop. Mr. AIKIN. In a field S. W. of the Tap-house at Hagley, Worcestershire.]

ama'ra.

C. Leaves winged; suckers from the bosom of the leaves. LINN. (Leaflets of the root-leaves roundish; those of the stem-leaves, tooth-angular; stem rooting at the bottom. Fl. Brit. E.)

\* The virtue of the flowers in hysteric and epileptic cases was first mentioned by Ray, in his letters, published by himself; and since then by Dr. Baker in the *Med. trans.* i. 442. The dose is from 20 to 90 grains twice a day. Do they not act like the *Erysimum cheiranthoides* in the epilepsies of children, and cure the disease by destroying the worms in the stomach and intestines, which were the cause of the fits? I have accounts of their success in young epileptics, from good authority; but have never been fortunate enough to see them of much use in hysterical cases. Whilst in Cornwall in the year 1793, I had the pleasure of meeting with the Rev. Mr. Gregor who told me that the flowering tops of the Ladies'-smock had been successfully used by his family for some generations in the cure of epilepsies, and some cases he mentioned to me were not likely to have been owing to worms. Our medical people have only used the flowers, but Mr. Gregor's family use the flowering tops. Can this account for the different success? Goats and sheep eat it. Horses and swine refuse it. Cows are not fond of it.

*Curt.* 158-*E. bot.* 1000-*Allioni.* 56. 1-*Herm. par.* 203-*J. B.* ii. 885-*C. B. pr.* 45. 1-*Park.* 1239. 3-*Pet.* 47. 1.

*Anthers* purple, not yellow as in *C. pratensis*. LINN. *Stem* angular, strong, and almost woody, (often decumbent, and then striking out roots. *Leaves* nearly smooth. *E.*) *Suckers* round, crooked. *Leaflets* irregularly indented, and thinly set with little teeth. *Bunches* terminating and lateral. *Flowers* white.

*Bitter Cress*, or *Ladies'-smock*. Near purls of water, rivulets, on the banks of rivers, boggy places, and moist meadows and pastures. Dorking, Surrey; Braintree. Essex; Middleton, Warwickshire; Lewisham, Harefield, Uxbridge. Battersea, Chelsea; and G. Comberton, Worcestershire. [Norwich. Mr. CROWE. Bungay, Suffolk. Mr. WOODWARD. About Worcester. St. Aston, near Birmingham.]

P. April—May.\*

**SISYMBRIUM.** *Pod* cylindrical, opening; valves straightish, about the length of the partition: *calyx* and *bloss.* expanding.

(1) *Pods* declining; short.

Leaves winged; leaflets egg-shaped.

*Nasturtium*.

*Fl. dan.* 690-*E. bot.* 855-*Woodv.* 48-*Fuchs.* 723-*J. B.* ii. 884-*Trag.* 82. 2-*Dod.* 592. 1-*Lob. obs.* 105. 3, and *ic.* i. 209. 1-*Ger. em.* 257. 5-*Park.* 1239. 1-*H. or.* iii. 4. 8-*Pet.* 47. 2. and 3-*Matth.* 487-*Lonic.* i. 114. 2-*Blackw.* 260.

*Blossom* white, terminating. (*Root* fibrous. *Stems* lying down, or floating, striking root from the underside. *Leaves* alternate, winged-lyre-shape, smooth; the leaflets of the lower ones rounder, nearly heart-shaped. *Fl. Brit. E.*)

*Water Cress.* Springs, brooks, and rivulets.

B. June—July.†

\* Sheep eat it. Cows are not fond of it. LINN. The young leaves are bitter and bitterish, but do not taste amiss in sallads. LIGHTFOOT. They are much used for that purpose in Lancashire. Mr. CALEY. The leaves are pungent, bitter and aromatic, in such a degree as to promise very considerable medical uses. The *Papilio Cardamine* lives upon the different species.

† This is very universally used as an early and wholesome spring sallad. It is an excellent anti-scorbutic and stomachic, with less acrimony than the curvy-grass. It is an ingredient in the anti-scorbutic juices.

sylves'tre. S. Pods oblong-egg-shaped, or cylindrical; leaflets spear-shaped, serrated.

*Curt.* 153—*Kniph.* 12—*E. bot.* 2324.—*Ger.* 190—*Ger. em.* 248. 6—*Park.* 1242—*Pet.* 46. 5—*H. ox.* iii. 6. 17—*Fuchs* 263—*J. B.* ii. 866. 2.

*Root* creeping very remarkably. *Leaflets* of the root-leaves somewhat egg-shaped, those of the stem-leaves spear-shaped. *Flowers* small, yellow. *Pedicles* declining. *Blossom* a little longer than the cup. *Nectary glands* four, in a circle. *Seeds* generally abortive, it increasing so considerably by the root. *Mr. WOODWARD.* *Stem* and *fruit-stalks* zig-zag. *Pods* with us nearly cylindrical, probably because the seeds do not ripen, but when they do the pod assumes an oblong-egg-shaped figure as described by Linnæus.

*Creeping Water-Cress. Water Rocket.* Marshy and watery places, and banks of rivers. Banks of the Thames, [of the Aire below Leeds. *Mr. WOODWARD.* Near Bungay, Suffolk, the only place in Norfolk and Suffolk where it has been hitherto found. *Mr. WOODWARD.* On the banks of the Severn, near Worcester. St.] (In Bedfordshire, frequent. *ABBOT. E*)

P. June—Sept.

amphib'ium. S. Pods oblong, egg-shaped; leaves wing-cleft, serrated; petals longer than the cup.

*Water Raddish. Raddish Water-cress.* Watery places, and banks of rivers. P. June—Aug.

1. Leaves simple, tooth-serrated. LINN.

*Fl. dan.* 984—*Kniph.* 12—*E. bot.* 1840—*C. B. pr.* 38. 1—*Park.* 1229. 2—*Pet.* 49. 8—*H. ox.* iii. 7. row 3. 4—*Ger.* 180—*Ger. em.* 234. 2.

When growing in water of some depth the *leaves* below the surface strap-shaped, winged, nearly like those of the *Hottonia*, those above spear-shaped, serrated. LINN. *Stem* upright, branched. *Leaves* spear-shaped, variously toothed, smooth, half embracing the stem. *Fruit-stalks* much longer than the pods, and much longer than in the *S. terrestre*. *Pod* oblong, very short, smooth, at first expanding, afterwards hanging down. *Mr. WOODWARD.* (*Root* fibrous. *E.*) *Stem* smooth, scored, crooked at the joints. *Leaves* egg-spear-shaped, scalloped and set with little teeth at the edge, with often from one to three winged clefts at the base. *Leaf-stalks* semi-cylindrical, chan-

neled above. *Fruit-stalks* while in flower about half an inch long, and upright, but afterwards bending back and pointing downwards. *Flower*, the whole yellow.

*Great Water Rocket*, or *Raddish*. *Sisymbrium amphibium aquaticum* β. LINN. *S. aquaticum*. POLLICH. *Radicula sylvestris seu palustris*. R. Syn. 301. (St.) [In the Foss at York. Mr. Wood.—Side of the river and wet ditches at Tamworth, and of the Severn near Worcester. St.]

Var. 2. Leaves deeply wing-cleft.

*Kniph.* 3-*Ger.* 185. 2-*J. B.* ii. 867. 2-*Pet.* 49. 10-*Lob. ic.* i. 319-*Ger. em.* 240. 2-*Park.* 1228. 1.

*Leaves*, the clefts extending nearly to the mid-rib, segments spear-strap-shaped, pointed, generally very entire, or with one or two saw-like teeth. Merely a variety growing with that with entire leaves, and having intermediate specimens with leaves pretty deeply cut and serrated, as in *Lob.* and its copies. St.

*Sisymbrium amphibium terrestre* γ. LINN. on the authority of the figures referred to by Vaillant.\*

S. Leaves wing-cleft, (unequally toothed; root simple; terres'tre.

E.) pods full of seed; petals shorter than the cup.

*Curt.* 289-*Fl. dan.* 931-*E. bot.* 1747-*J. B.* ii. 867. 1-*C. B. pr.* 38. 2-*Park.* 1228. 1. *f.* 2-*H. or.* iii. 7 row 3. 3-*Pet.* 49. 9.

(*Root* spindle-shaped, small. *Stem* frequently upright, a foot high, leafy, furrowed smooth. E.) *Leaves*, segments confluent with the mid-rib, often pointing backwards, alternate, or in pairs, elliptical, or egg-shaped, serrated, or toothed here and there. HALL. *Petals* yellow, blunt, small, very entire, somewhat shorter than the cups.

*Annual Water-cress*, or *Rocket*. *Sisymbrium amphibium palustre*. LINN.—*S. palustre*. POLLICH.

The *S. islandicum* with lyre-like winged leaves, the leaflets oval and toothed, figured in *Fl. dan.* 409, approaches very nearly to this, but the leaflets are not confluent with the mid-rib.

Edges of wet ditches, and on ground apt to be occasionally overflowed in the environs of London, as Tothil-fields, and

\* Ends of the general fruit-stalks often swollen into a cauliflower-like substance, purplish, and containing small grubs of the same colour. St. Cows refuse it. Sheep and goats are not fond of it.



between the Magdalen Hospital and Lambeth Marsh. CURTIS. —[Bungay Common, Suffolk. Mr. WOODWARD.—Near Stafford, on the road to the Castle-hill. St.] (On the banks of the Cam, Isle of Ely. Rev. Dr. GOODENOUGH. *Fl. Brit. E.*) A. June—Sept.

(2) *Stem naked, or nearly so.*

*tenuifolium*. S. Leaves smooth, nearly entire; the lowermost once or twice pinnatifid; the uppermost undivided. E. bot.

*E. bot.* 525—Curt.

Very much branched from the root. *Leaves* with nearly winged-clefts. Mr. WOODWARD. *Stem* one foot and a half high, upright, cylindrical, woody at the base. *Leaves* with winged-clefts and jagged, smooth, expanding, of a disagreeable scent. *Calyx* two of the leaves almost upright; two bulging at the ends, bent back; before the blossom is expanded appearing as if tipped with two horns from the projecting points of two of the leaves, which are beset with one or two hairs. *Petals* of the larger size, twice as large as the calyx, yellow, with claws. *Style* very short. *Pods* one and a half inch long, round, marked with a prominent line on each side. *Seeds* egg-shaped, slightly compressed. CURTIS. *Leaves*, segments of those with winged clefts strap-shaped-oblong, expanding, toothed, and sometimes quite entire, the terminating one broader, spear-shaped, indented. ST. (*Root* spindle-shaped, whitish, rather woody. *Stem* very much branched. E.)

We are indebted to the accurate researches of Dr. Smith for rescuing this plant from its former improper situation among the *Brassicæ*, and placing it with its congeners, the *Sisymbria*.

*Wild Rocket*. RAY. *Wall Cabbage, or Rocket*. *Sisymbrium tenuifolium*. LINN. *Brassica muralis*. Bot arr. ed. iii. Old walls and rubbish. Walls of Yarmouth. RAY. [Mr. WOODWARD.] Chester, Taunton Castle, Lichfield Close, Berwick, &c. RAY; and about London, Bristol and Exeter. HUDSON. London Bridge. Mr. JONES. Near Sunderland, and about Tinmouth Castle, abundantly. Mr. ROBSON.

July.—Oct.\*

\* All the parts of this plant are considerably acrid, and have a rank disagreeable smell.

S. Pods upright; leaves spear-shaped, deeply serrated; muralle stems spreading, roughish.

*E. bot.* 1090.

*Root* branched. *Stems* tending to branch, leafy, cylindrical, covered with reflexed hairs; sometimes very short. *Leaves* alternate, on leaf-stalks, broad-spear-shaped, unequally waved and serrated, smoothish, not glaucous. *Fruit-stalks* terminal, very long, forming a bunch-like corymbus. *Blossoms* yellow, only half the size of those of *S. tenuifolium*. *Calyx* smooth. *Pod* slender. *Fruit-stalks*, and *pedicles* often rather hairy. *Fl. Brit.*

*Sand Rocket.* Among rubbish, and the sands of the sea shore. Common throughout the Isle of Thanet, particularly about Ramsgate. Mr. DILLWYN. St. Vincent's Rocks, &c. below Bristol. Mr. EDWARD FORSTER. Plentiful about Swansea. Mr. DILLWYN, in *Bot. Guide.* A. Autumn, E.)

S. Leaves between winged and toothed, somewhat hairy; monen'ae stalks smooth. See *Brassica monensis*.

(3) *Leaves compound or winged.*

S. Petals smaller than the calyx; leaves doubly com-So'phia, pound-winged, (rather hairy. E.)

*E. bot.* 963—*Ludw.* 73—*Fl. dan.* 528—*Sheldr.—Kniph.* 6—*Dod.* 133. 2—*Lob. obs.* 426. 1, and *ic. i.* 738. 2—*Ger. em.* 1068—*Park.* 830. 3—*Pet.* 46. 12—*Fuchs.* 2—*J. B.* ii. 886. 2—*Trag.* 338—*Ger.* 910. 1 and 2—*Lonic.*

(*Root* spindle-shaped, small. *Stem* two feet high, upright, branched, leafy. *Leaves* alternate. *Fl. Brit.* E.) *Pods* long, stiff, crooked, upright. *Seeds* yellow. *Blossoms* yellow, small. (*Calyx* nearly as much coloured. E.)

*Flix-weed.* Walls and amongst rubbish. A. July.\*

S. Leaves notched, toothed, naked; stem smooth; pods I'rio, upright.

\* The pods retain the seeds all winter, and small birds feed upon them. The plant has been sometimes prescribed in hysteric and dysenteric cases; and the seeds are given to destroy worms. Sheep and cows eat it. Horses and goats are not fond of it. Swine refuse it.

TETRADYNAMIA. SILIQUOSA. *Erysimum*.

*Jacq. austr.* 322—*Curt.* 311—*E. bot.* 1631—*Park.* 834. 4—*H. ox.* iii. 3. row 3. 3—*Pet.* 46. 4—*Col. ecphr.* 265.

*Stem* nearly smooth. *Leaves* variously toothed and cut, sometimes with winged clefts at the base, generally terminated by a long spear-shaped lobe; the upper usually simple, spear-shaped, with one or two teeth towards the base. *Pods* long, strap-shaped, upright, but not pressed to the stem. *Fruit-stalks* short. *Mr. Woodward.* *Blossoms* small, yellow. (*Root* spindle-shaped. *E.*)

*London Rocket. Broad-leaved Water-cress.* Old walls and amongst rubbish. (On London Bridge and the walls near it. *Mr. Woodward.*—On the walls of Berwick-upon-Tweed. *RAY.*—Under Merton Wall; Rose Lane, Oxford. *SIBTHORPE.*—Frequent about London; on walls at Wisbeach. *Mr. SERIMSHIRE.*—Road sides near Eton, Bucks. *Mr. GOTOBED, in Bot. Guide.* *E.*) A. May—Aug.

**ERYSIMUM.** *Pod* straight, strap-shaped, exactly 4-sided: *cal.* closed: *summit* a knob.

officinale.

*E.* *Pods* pressed to the spike-stalk; leaves notched.

*Curt.* 326—*E. bot.* 735—*Ludw.* 187—*Fl. dan.* 560—*Woodv.* 244—*Sheldr.-Blackw.* 28—*Ger.* 198. 1—*Pet.* 46. 3—*Fuchs.* 592—*J. B.* 863—*Dod.* 714—*Ger. em.* 254. 1—*Trag.* 102. 1—*Lonic. i.* 165. 1—*Lob. adv.* 69, and *ic. i.* 206. 1.

*Stem* cylindrical, frequently purple, particularly at the angles of the branches. *Branches* very expanding. *Pods* roundish, somewhat awl-shaped, pressed so close to the spike-stalks as to appear naked. *Mr. Woodward.* *Stem* hairy, branched towards the top. *Branches* ascending. *Leaves* slightly woolly, the lower winged, the upper halberd-shaped. *Calyx* about half as long as the petals. *Blossom* yellow. *Germs* cylindrical, tapering upwards. *Summit* flat, with a shallow nick. *Pod* conical, scarce sensibly 4-cornered, hairy. *Seeds* oblong. *Flowers* in long spikes, terminating.

*Hedge Mustard, or Worm-seed. Bank Cresses.* Under walls and hedges, road sides and among rubbish.

A. May—June.\*

\* It is warm and acrid to the taste; and, when cultivated, is used as a pot-herb. Birds are fond of the seeds. Sheep and goats eat it. Horses, and swine refuse it. By means of this herb a hoarseness, cured by loud speaking, was cured in three days, by Rondeletius. LINN. The Juice of Hedge Mustard is beyond any thing in ulcers of the throat. This was found by experience by the Honourable Harry Gray, when

*E.* Pods indistinctly 4-cornered; lower leaves lyre-shaped, Barba'rea, the terminating segment circular; (upper leaves inversely egg-shaped, toothed. Fl. Brit. E.)

*E. bot.* 443—*Fl. dan.* 985—*Walc.—Ger.* 188—*Fuchs.* 746—*J. B.* ii. 869—*Trag.* 101. 2—*Lonic.* i. 165. 2—*Dod.* 712. 1—*Lob. obs.* 104. 2, and *ic.* i. 207. 2—*Ger. em.* 243—*Park.* 820—*H. or.* iii. 5. 11 and 12—*Pet.* 46. 1—*Math.* 572.

Stems strong, with about eight deep furrows, and as many sharp ridges. Leaves half embracing the stem, winged, the terminating leaflet egg-shaped, notched. Calyx-leaves, in the flowers not yet expanded, green, and two of them larger, with a helmet-shaped hollow at the top. Pods long, slender, somewhat cylindrical, slightly flattened, not very sensibly 4-edged. Blossoms yellow.

*Winter Cresses.* *Winter*, or *Yellow Rocket*. Walls, banks on the sides of running streams, watery places, and sometimes in cultivated fields. [In Devonshire and plentiful in Launceston Castle, Cornwall.] P. May—Oct.\*

Var. 2. Leaves smaller, and more frequently scalloped. RAY.

*E. bot.* 1129—*Pet.* 46. 2.

(This is *E. Barbarea*  $\beta$  of Linn. the *E. præcox* of the Fl. Brit. and thus described by Dr. Smith. Lower leaves lyrate, upper ones pinnatifid, their segments linear-oblong and entire. Stem about eighteen inches, in moist situations two feet high. Radical-leaves very numerous, exactly like those of *Sisymbrium Nasturtium*. Flowers smaller and paler yellow than those of *E. Barbarea*. Pods nearly twice as long as in that species, exactly square, smooth, crowned with a very short permanent style. Calyx-leaves cohering, much broader than those of *E. Barbarea*. This herb is grateful in sallads, tasting exactly like *Sisymbrium Nasturtium*, whereas *E. Barbarea* is mucilaginous, and of a nauseous bitter.

*Early Winter Cress.* Found by the Rev. Dr. BEEKE on a hill half a mile North of Teignmouth, also near Dawlish, Kingsteignton; Honiton and Bovey Tracey. Near Leeds? Dr. SMITH. About Settle, Yorkshire. W. HUSTLER, Esq. in Whitaker's Hist. of Craven.

A. Dill. Pet.—P. E. bot.—B. Fl. Brit.—May—Aug. E.)

"all advice of Doctors and Surgeons availed nothing. This from his own mouth."—Manuscript note in a copy of Parkinson which formerly belonged to Mr. Saunders, surgeon at Stourbridge.

\* The common people in Sweden use the leaves in sallads, early in the spring, and late in the autumn; they also boil them as Cale. It is sown in gardens as an early spring sallad. LINN. and also in England, where it is



Allia'ria.

E. Leaves heart-shaped.

*E. bot.* 796—*Ludw.* 77—*Fl. dan.* 935—*Curt.* 144—*Kniph.* 3—*Woodv.* 245—*Walc.—Fuchs.* 104—*J. B.* ii. 883—*Lonic* i. 160. 2—*Trag.* 86—*Matth.* 843—*Dod.* 686—*Lob. obs.* 285. 3, and *ic.* i. 530. 1—*Ger. em.* 794—*Park.* 112. 5—*H. ox.* iii. 10. 6—*Ger.* 650—*Pet.* 45. 1—*Blackw.* 372.

(Whole *plant* smooth, shining, having a strong smell of garlic. *Pods* very long, awl-shaped. *Fl. Brit. E.*) *Stem* cylindrical, (upright, scored, leafy. *E.*) *Leaves* bluntly and irregularly serrated, alternate, on leaf-stalks. *Flowers* in a corymbus, (white. *E.*) *Nectary glands* 4, one on the outside of each pair of longer stamens, and one supporting each of the short stamens which grow in a cavity at the top of them.

*Jack-by-the-hedge. Sauce-alone. Garlic Hedge-mustard.*  
Hedges, ditch banks, and shady places. B. May.\*

cheiran-  
thoides.

E. Stem very much branched; leaves spear-shaped, oblique, waved and toothed; pods expanding.

*Jacq. austr.* 23—*E. bot.* 942—*Kniph.* 11—*Fl. dan.* 923—*Lob. obs.* 112. 1, and *ic.* i. 225. 1—*Ger. em.* 273. 4—*Park.* 868. 3—*H. ox.* iii. 5. 7—*Pet.* 45. 2—*J. B.* ii. 894. 1.

*Pods* slightly expanding, or at a distance from, not near to the stem. *Summits* small, scarcely divided. *LINN.* *Seeds* oblong, yellowish brown, intensely bitter. *RAY.* *Stem* one to two cubits high, rough, stiff, quite straight, scored, sometimes a little branched. *Leaves* very entire, roughish, the mid-rib running down the stem, the uppermost sometimes a little toothed. *Blossom* small, yellow. *Pods* quadrangular, standing out, but upright. *LYONS.* (The *partial flower-stalks* become horizontal as the fruit increases, but the *Pods* themselves stand erect, and are square, tipped with a minute sessile stigma. *E. bot. E.*) *Leaves* narrow spear-shaped.

*Treacle Worm-seed, or Hedge-mustard.* Osier-holts, and banks of the river near Ely; Ashbourne, Derbyshire; and corn-fields about Elden, Suffolk. [Very common amongst turnips

called French Cress. *ST.* Cows eat it. Horses and swine refuse it. Goats and sheep are not fond of it. (This plant with double blossoms, is frequently found an ornament to our gardens. *E.*)

\* The Prussians eat the leaves with salted meats in the spring.—They are useful with Lettuce and the colder sallads. The seeds excite sneezing. Cows and goats eat it. Horses, sheep, and swine refuse it. The *Curculio Alliarie* feeds upon it. *LINN.*—When growing in poultry yards the fowls eat it, and it gives an intolerable rank taste to their flesh. In Wales it is much used as a frying herb.

near Bungay, Suffolk. Mr. WOODWARD.—Ballast Hills, Sunderland. Mr. WEIGHELL.]—(Near the Parsonage at Slinfold, Sussex. Mr. BORRER, in *Bot. Guide*.—Not rare in Norfolk. Mr. CROWE.—By the road near Ipswich leading towards Norwich. Dr. SMITH. E.) A. July.\*

**CHEIRANTHUS.** *Germen* with a glandular tooth on each side: *calyx* closed, two of its leaflets bulging at the base; *seeds* flat.

C. Leaves spear-shaped, acute, (with a dense hoariness fruticulosus underneath; E.) branches angular; stem shrub-like.

*E. bot.* 1934—*Barrel. ic.* t. 1228.

(*Leaves* on leaf-stalks, crowded together, mostly very entire; the lowermost with slight serratures. *Petals* notched. *Calyx* sometimes tinged with purple. *Style* short. *Stigma* notched at the end. *Seeds* not winged. It differs from the *C. Cheiri* of the gardens in having *leaves* more acute, and white underneath; smaller *flowers* of a pure yellow colour, never exhibiting rust-coloured or blood-coloured blotches. *Fl. Brit.* May be distinguished also, as Mr. CROWE has remarked, by the *petals* being recurved, and rather stiff; not flaccid and loosely hanging down. E.) *Flowers* in terminating bunches, yellow, (very fragrant. E.)

*Wild Wall-flower. Wall Gilliflower. C. fruticosus.* LINN. *Fl. Brit.* *C. Cheiri.* WITH. ed. 4. and of most other English Authors. Old walls and roofs, P. May—June.†

C. Leaves cottony, blunt, somewhat indented, those of sinuatus, the branches entire; pods prickly.

*E. bot.* 462—*Lob. adv.* 140, and *ic.* i. 330. 2—*Ger. em.* 460. 2—*Ger.* 374. 2—*J. B.* ii. 876. 1.

Whole plant cottony, hoary. Stem upright, (two feet high, branched, spreading, leafy. E.) Root-leaves broad, spear-shaped, alternately toothed, blunt; stem-leaves spear-shaped, blunt, channeled, with two pair of blunt teeth about the middle;

\* The country people give the seeds to destroy worms, and with good effect.—Horses, cows, goats, sheep, and swine eat it.

† It has found a place in our gardens, where it has produced a considerable number of varieties, but none which have a more delightful scent than the wild one. The *Phalana meticulosa* and *Pronuba* feed upon it. LINN.

*branch-leaves* entire, not toothed. *Petals* flesh-coloured, blunt, whitish at the base. *Pods* very long, cottony. (*Flowers* large, very fragrant in the evening. E.)

*Sea Stock. Prickly-podded Gilliflower.* Sandy sea shores of Caernarvonshire, Anglesea, and Cornwall, and on the rocks at Aberdovie, Merionethshire.—(Near Pembroke. J. ADAMS, Esq. *Fl. Brit. E.*) B. June—Aug.

(inca'nus. C. Leaves spear-shaped, blunt, entire, hoary; pods with a simple blunt summit; stem shrubby.

*E. bot.* 1935—*Mill. ill.* 55.

*Stem* branched, round, leafy, hoary with pubescence, as is all the herbage. *Leaves* tapering at the base. *Flowers* in terminal bunches, fragrant, naturally of a purplish crimson, often double. *Petals* rounded and nearly entire, their claws pale and greenish. *Pods* long, cylindrical, hoary; their points a little elongated, but simple, blunt, and crowned with the permanent dilated stigma. *Seeds* numerous. *E. bot.*

*Hoary Shrubby Stock.* Discovered by Mr. TURNER and Mr. W. BORRER in 1806, on the cliffs to the East of Hastings, growing on rocky ledges accessible only to a person let down from the summit by a rope. Such is likewise its natural situation in the South of Europe. In Britain it is frequently cultivated in gardens. B. June—July. E.)

HES'PERIS. *Petals* turned obliquely: glands within the shorter stamens: *calyx* closed: *pod* stiff and straight: *summit* forked at the base, approaching at the top.

inodo'ra. H. Stem simple, upright; leaves (egg-spear-shaped, nearly halberd-shaped at the base, E.) toothed; petals blunt.

*Jacq. austr.* 347—*E. bot.* 731—*Fl. dan.* 924 and 921—*Rupp. a. Hall.* at p. 78—*J. B.* ii. 878. 2—*Clus.* i. 297. 1—*Dod.* 161. 1—*Lob. obs.* 175. 1, and *ic.* i. 323. 2—*Ger. em.* 462. 1—*Park.* 1682. 3—*H. ox.* iii. 10. row 1. 1.

So like *H. matronalis* as to be scarcely distinguishable but by a very experienced botanist, but the leaves are nearly halberd-shaped, with a transverse base, sharply toothed, especially at the base, softer, and not so rough. *Calyx* not coloured. *Petals* blunt, without a point. *Stamens* not projecting beyond the tube

of the flower. LINN. *Leaves* roughish, and woolly on both sides, with sharp tooth-like serratures, spear-shaped, both broad and narrow. *Petals* very entire, or slightly nicked, white, flesh-coloured, purple, or purplish red; *claws* pale, longer than the calyx. JACQUIN. *Leaves* egg-shaped, tooth-serrated, pointed, nearly sessile: I have not seen any halberb-shaped. HUDSON. *Stem* hairy. *Leaves* hairy, irregularly tooth-serrated, either sessile or on short leaf-stalks; not halberd-shaped. *Flowers* large, purplish red, in a terminating spike-like bunch; *petals* rounded at the end. *Fruit-stalks* expanding. The Sp. pl. refers the fig. of Dod. 161 to the *H. matronalis*, and that of Clus. i. 297. 1. to *H. inodora*; but these figures, being both impressions from the same block, a doubt arises whether these two species are really distinct, and if so, to which of them our plant belongs. Specimens which I collected in Cornwall agree perfectly well with the fig. of Jacquin and the *Flora danica*. (Mr. BORRER observes that the different form of the *petals* seems the principal distinction between this species and *H. matronalis*. *Bot. Guide*. 611. E.)

*Scentless Damewort, or Dame's-violet.* Pastures and hedges. On the banks of the rivulets about Dalehead, Cumberland, and Grassmere, Westmoreland. RAY. [About Falmouth.] (At Southover near Lewes, Sussex. Mr. BORRER.—Near the old castle of Airly, Angus-shire. Mr. J. MACKAY, in *Fl. Brit. E.*)

B. LINN. and HUDS. P. for 10 years. JACQ. May—June.

**ARABIS.** *Nectary*, glands 4, within the leaflets of the calyx, resembling a reflected scale: *pod* long, compressed, strap-shaped, entire, and knobbed at the end.

A. Root-leaves spear-shaped, toothed, tapering into leaf-stalks; stem-leaves very entire, sitting. *thalia'na*.

*Curt.—E. bot.* 901—*Fl. dan.* 1106—*Pollich.* ii. at p. 243—*Pluk.* 80. 2—*J. B.* ii. 870. 2—*H. ox.* iii. 7. 5—*Pet.* 48. 2—*Thal.* 7. D—*Pet.* 48. 1—*Barr.* 269 and 270.

*Root-leaves* disposed in a circle on the ground, hairy; those of the stem nearly smooth. *Flowers* small, white. HALL. *Stem* one inch to more than a foot high. *Leaves*, hairs at the base simple, those on the edges and surface dividing into two and three forks. *Nectary glands* so very minute as scarcely to be discovered even with a magnifier. CURTIS. (After scattering its seeds in May it soon withers and disappears. *E. bot.* E.)



*Turkey-pod. Common Wall-cress.* Walls, roofs, dry sandy pastures and cornfields. (A. April. E.)

stric'ta.

A. Leaves toothed, rough with hair; those of the root spatula-shaped, those of the stem half embracing the stem, oblong: pods 2-edged, upright. HUDS.

*Valley mar. pl.—E. bot. 614—Crantz. i. 3. 2.*

Root branched. Stems several, six inches high, herbaceous, simple, upright, cylindrical, woolly at the base, smooth above. Root-leaves many, spatula-shaped, toothed, and cut-toothed, rough with hair; hairs long, white; stem-leaves 3 or 4, half embracing the stem, oblong, toothed, rough with hair. Flowers in bunches, large, white. Fruit-stalks short. Petals inversely egg-shaped, very entire; as long again as the calyx. Pods upright, quite straight, one and a half inch long, 2-edged, 4-cornered at the base, scored. Seeds roundish, brown. HUDSON. Glands forming a kind of ring round the base of the stamens. HALL.

*Rough Turkey-pod. Bristol Rock-cress. Arabis thaliana.* CRANTZ. i. 39. *Cardamine pumila Bellidis folio, alpina.* R. Syn. 300. ST. *Arabis arenosa.* SCOP. n. 837. Rocks and stony mountainous situations. St. Vincent's Rocks near Bristol, in great plenty. Dr. BROUGHTON and Mr. FORD.—(On the South side of the river about a mile below the Hot-wells, sparingly. Mr. CLAYFIELD and Mr. DYER. *Fl. Brit.*—Kirkland Fell pasture, Cumberland. HUTCHINSON.

P. Fl. Brit. E.)—A. May.

(his'pida.

A. Root-leaves notched, lyre-shaped, hispid; stem-leaves spear-shaped, covered with forked hairs; stems smooth, branched.

*Fl. dan. 386—E. bot. t. 469—Dill. elth. 61. 71—Pluk. Phyt. t. 101. f. 3—Pet. 50. 3—Lightf. 347. t. 15. f. 2.*

Roots rather woody, matted together. Stems many, about a span high, ascending, furrowed, bearing few leaves. Root-leaves numerous, on leaf-stalks, winged. Blossoms sometimes purple, often white with a purplish border. Calyx blunt, smooth. *Fl. Brit.*

*Alpine, or Welch Rock-cress. Arabis hispida.* LINN. Syst. Veg. and *Fl. Brit.* *Cardamine petræa.* HUDS. *Fl. dan.* and WITH. ed. 3 and 4. *Cardamine hastulata.* E. bot. at least Dr. Smith assures us, on comparing many specimens communicated by Mr. Bingley, that no difference exists but that of the leaves being almost entirely smooth, and less lobed, that they are com-

monly found in *A. hispida*. E.)—Lofty rocks in Caernarvonshire, as Moelyn-rhud near Festiniog; Clogwyn, dŷ'r Arddŷ, and Clogwyn y Garnded, near Llanberys; and on moist rocks above the Lake Lyn-du, in great plenty. Mr. GRIFFITH. By the first mile stone from Shrewsbury to Welsh Pool. Mr. AIKIN. (Middleton Dale, Derbyshire. Mr. COKE. E.) P. May—July.

A. Leaves embracing the stem; pods bent backwards, flat, strap-shaped; cups somewhat wrinkled. Turrita.

*Jacq. austr.* 11—*E. bot.* 178—*Clus.* ii. 126. 2—*Ger. em.* 272. 2—*Park.* 852. 2—*Pet.* 47. 1—*H. ox.* iii. 2. 23—*Barr.* 353.

*Flowers* straw-coloured. LINN. *Glands* as in *Brassica*. MART. *Root* woody. *Root-leaves* on leaf-stalks, egg-shaped, toothed, pointed, rough with hair; *stem-leaves* oblong, toothed, cottony. *Flowers* upright, white. *Fruit-stalks* short. *Glands* within the shorter, and without the longer stamens. *Style* short, permanent. *Seeds* round, compressed. LYONS. *Stem* one to two feet high, cylindrical, scored, downy, generally simple. *Leaves* hairy on both sides; *root-leaves* oblong, thick, greyish, waved at the edge; *stem-leaves* similar, toothed, regularly decreasing upwards in size; the *upper* more pointed, rather serrated than toothed, not so grey. *Pods* very long, smooth, strap-shaped, compressed, on short fruit-stalks, rising at the base and then bent downwards, forming an elegant curve. WOODWARD.

*Tower Turkey-pod. Tower Wall-cress.* Old walls and stony places. [On Trinity and St. John's College walls, Cambridge. Mr. WOODWARD.]—(On the walls of Magdalen College, Oxford. SIBTHORP. E.) A. May—June.—(B. Fl. Brit. E.)

TURRITIS. *Pod* very long, angular, stiff and straight: *calyx* close, upright: *bloss.* upright.

T. *Root-leaves* toothed, rough with hair; *stem-leaves* very entire, embracing the stem, smooth. gla'bra.

*Curt.* 253—*Fl. dan.* 809—*E. bot.* 777—*Clus.* ii. 126. 1—*Lob. ic.* 220. 2—*Ger. em.* 272. 1—*Ger.* 212. 1—*Park.* 852. 1—*H. ox.* iii. 2. 22—*Pet.* 47. 10.

*Nectary glands* none. POLLICH. *Stem* two to three feet high, simple, cylindrical, slightly scored, smooth. *Root-leaves* spear-shaped, tapering into a leaf-stalk, indented towards the base, entire upwards; *stem-leaves* numerous, heart-spear-shaped, generally entire, but sometimes slightly toothed, pale sea-green. *Pods* smooth, very numerous, lying to the stem, and tiled.

*Seeds* reddish brown. *WOODWARD.* *Pods* when fully grown cylindrical, compressed. *Blossom* greenish white. *Bunches* long, terminating.

*Tower Mustard.* *Smooth Tower-wort.* Meadows, pastures, pits, and waste places, in a gravelly soil. (In sand-pits and other places near Charlton church; E.) and Lewisham, Kent; near Colchester. [Spixwort, Norfolk. Mr. *WOODWARD.*—Lichfield. Mr. *WHATELY.*—Castle Bromwich. Mr. *JONES.*—Between Ashbourne and Okeover. ST.—In the quarries above Bath, which is one of the stations mentioned by Ray for his *Cardamine Bellidis folio.* Mr. *SWAYNE.*—St. Vincent's Rocks, near Bristol, which, being another station of Mr. Ray's plant, makes it probable that his *Cardamine* was our *Turritis glabra.*] A. May—June.

*hirsuta.*

T. All the leaves hispid; stem-leaves embracing the stem.

*Dicks. h. s.*—*E. bot.* 587—*Jacq. ic. i.*—*Walc.*—*C. B. pr.* 42. 2—*Park.* 834. 6—*Pet.* 47. 12—*H. ox. iii.* 3. 5—*Fl. dan.* 1040.

*Stem* rough with hair, simple, not so tall as that of *T. glabra.* *Root-leaves* egg-shaped, toothed; *stem-leaves* spear-shaped, blunt, toothed, half embracing the stem. *Pods* smooth, not so numerous as in *T. glabra.* *WOODWARD.* *Blossom* white. *Bunches* terminating. Distinguishable from *Arabis thaliana* by the stem-leaves embracing the stem. ST. *Arabis hirsuta* *SCOP.* its nectary glands corresponding with Linnæus's character of the *Arabis.* *SCOP. WIGGERS.*

*Wall Cress.* *Hairy Tower-wort.* Rocks, stony places, old walls and castles, and dry mountainous pastures. Banks beyond Midhurst, Sussex; Switham Bottom near Croydon; about Settle, Yorkshire; King's Park, Edinburgh. *LIGHTFOOT.*—[Lakenham, near Norwich. Mr. *CROWE.*—Wisbeach, Bury. Mr. *WOODWARD.*—St. Vincent's Rocks, plentifully. Dr. *BROUGHTON* and Mr. *FORD.*—Wick Cliffs. Mr. *SWAYNE.*—Baydales, Darlington. Mr. *ROBSON.*]—(Old Walls at Ely, Brandon, and Weeting, Norfolk. Mr. *WOODWARD.* E.) P. June.

**BRAS'SICA.** *Calyx* upright, close: *glands*, one between each shorter stamen and the pistil, and one between each pair of longer stamens and the calyx: *seeds* globular.

*orientalis.*

B. (Leaves elliptic-heart-shaped, blunt, embracing the stem, smooth; root-leaves inversely-egg-shaped, entire; pods 4-cornered. E.)

*Jacq. austr.* 282—*Kniph.* *Brassica campestris*—*E. bot.* 1804—*J. B.* ii. 835. 4—*Clus.* ii. 127. 1—*Dod.* 626. 2—*Lob. obs.* 215. 3, and *ic.* i. 396. 2—*Ger. em.* 536. 2—*Park.* 580. 9—*H. ox.* iii. 2. 19 and 20—*Pet.* 45. 5—*Ger.* 430. 2—*J. B.* ii. 835. 3.

*Stem-leaves* egg-shaped, blunt at the end, heart-shaped at the base, smooth, sea-green, very entire. *Petals* white, with a tinge of straw-colour. *Fruit-stalks* expanding. *Pods* 3 or 4 inches long, the lower standing wide. Specimen from Mr. Curtis's garden. **WOODWARD.** (All the *leaves* smooth, glaucous, very entire, blunt. *Flowers* small. *Fl. Brit.* E.)

*Hare's-ear Cabbage.* *Brassica campestris perfoliata flore albo.* *R. Syn.* 293. *Huds. ed. i.* *Brassica Turrita.* **WIGG.** Cornfields and cliffs on the sea coast near Harwich, and Bardsey, near Orford, Suffolk. **RAY.**—Cornfields near Godstone, and Marshfield, Sussex. **HUDSON.** A. June.

B. Root and stem slender; stem-leaves uniform, heart-campes'tris. shaped, (pointed, embracing the stem; lower leaves lyre-shaped, toothed, rather hairy. E.)

*E. bot.* 2234—*Fl. dan.* 550, but not accurate.

*Root-leaves* lyre-shaped, somewhat rough with hairs; *stem-leaves* smooth. *Blossoms* yellow. **LINN.** *Root-leaves* oblong, indented, blunt, rough. *Flowers* yellow or white. **HUDSON.** *Flowers* yellow in a garden specimen. **WOODWARD.** (*Stem* upright, branched, leafy, cylindrical, smooth, rather glaucous. *Lower-leaves* rough with hairs on the veins underneath; all slightly glaucous, paler on the under surface. *Petals* yellow, thrice as wide as those of the preceding species. *Pods* cylindrical, bluntly four-cornered, reticularly veined, a little swelling out, two inches long; with an awl-shaped beak, quadrangular at the base, striated. *Fl. Brit.* Dr. Smith observes that this species is most clearly distinct from *B. orientalis*, and indeed very unlike that plant.

*Field Cabbage.* *Wild Navew.* *B. campestris.* **LINN.** *Fl. Brit.* At Harwich, and plentifully between Cropredy and Morlington, Oxfordshire. **Rev. Dr. GOODENOUGH.**—Near Broadford, Isle of Skye, and in fields near Forfar. **Mr. MACKAY.** *Fl. Brit.*—Bradley near Orford, Suffolk. **Rev. Mr. SUTTON.** E.)

A. June.

B. The root a regular continuation of the stem; spindle-shaped. Na'pus.



*E. bot.* 2146—*Ludw.* 165—*Blackw.* 224—*Walc.*—*Fuchs.* 177—*J. B.* ii. 843—*Trag.* 730—*Lonic.* i. 191. 3—*Lob. obs.* 200. 2—*Ger. em.* 235. 2—*Park.* 865—*Pet.* 45. 9—*H. ox.* iii. 2. row 3. 2. f. 3—*Ger.* 181. 2.

*Root-leaves* lyre-shaped, smooth. *Stem-leaves* heart-shaped oblong, embracing the stem, a little toothed. *Calyx* expanding, approaching to that of *Sinapis*. LINN. *Stem* somewhat branched, cylindrical, smooth, about two feet high. *Leaves* smooth, sea-green. *Calyx* yellowish green. *Summit* a flattened knob. *Pod* with frequently three or four warty excrescences, not occasioned merely by the bulk of the inclosed seeds. There is a variety with the leaves hairy at the edge. *Blossom* yellow.

*Rape.* *Cole-seed.* On ditch banks and among corn.

B. May.\*

Ra'pa.

B. The root a regular continuation of the stem; round, depressed, fleshy.

*E. bot.* 2176—*Blackw.* 231—*Fuchs.* 212—*Trag.* 728.—*Matth.* 435—*Dod.* 673. 1—*Lob. obs.* 98. 1, and *ic.* 197. 1—*Ger. em.* 232. 1—*H. ox.* iii. 2. row 2. 1—*Pet.* 45. 7—*Ger.* 177. 1—*Ger.* 177. 2.

*Root-leaves* rough, deeply indented (or lyre-shaped. *Stem-leaves* very entire, smooth. *Pods* cylindrical, veiny. *Stem* upright, branched, smooth and leafy. E.) *Calyx* yellow. *Blossom* yellow.

*Turnep.*

Var. 2. *Roots* oblong.

*J. B.* ii. 838—*Matth.* 436—*Dod.* 673. 2—*Lob. obs.* 98. 2, and *ic.* i. 197. 2—*Ger. em.* 232. 2—*H. ox.* iii. 2. row. 3. 2. f. 1—*Pet.* 45. 8.

*Turnep.* *Knolles.* Cornfields, and borders of cornfields.

B. April.†

\* The roots of the cultivated variety may be eaten like the Turnep, but they have a stronger taste, and its seeds, which are called Coleseed, afford a large quantity of expressed oil, called Rape Oil, (particularly serviceable to the wool combers, for this purpose it is extensively cultivated in the Isle of Thanet. E.) What remains after the expressing of the oil is called Oil Cake, and is used for fattening oxen. In Norfolk the cakes are broken to pieces, and strewed on the land as a manure. It is thought to be a very efficacious one, and is sold from 4l to 6l. per ton. About half a ton is laid on an acre. WOODWARD. Cows, goats, and swine eat it.

† The roots are either eaten raw, boiled, or roasted. Pepper is commonly used with them. They relax the bowels, and are supposed to sweeten the blood. They are hurtful to pregnant or hysterical women, and to those who are subject to flatulencies. The juice, well fermented

B. The root a regular continuation of the stem; cylindrical, fleshy; (all the leaves smooth, glaucous, serpentine, or lobed. Fl. Brit. E.) olera'cea.

*E. bot.* 637—*Pet.* 45. 6.

*Stem-leaves* very much waved, and variously indented, sea-green, with frequently a mixture of purple, the *lower* somewhat egg-shaped, sitting; the *upper* mostly strap-shaped. *Flowers* large, yellow. *Calyx* leaves egg-shaped, broad, yellow. *Pods* short, swelling. Mr. WOODWARD. *Seeds* dusky purple.

*Sea Cole-wort. Sea Cabbage.* Cliffs on the sea coast. Near Harlech Castle, Merionethshire; Penzance, and other places in Cornwall. HUDSON.—[Abundantly on the sea cliffs at Straithes, near Whitby, Yorkshire. Mr. ROBSON.]—(Abundant on Dover Cliffs, and along the coast towards Hythe. E.)\*

B. Leaves wing-cleft; wings cut-serrated; stem nearly monens'is, naked, trailing. HUDS.

*E. bot.* 962—*Lightf.* 15. 1, at p. 347—*Pet.* 46. 7—*Dill. elth.* 111. 135. has wing-cleft leaves, the segments very entire. It accords best with the Linn. char. and is, I suspect, a distinct plant from that of *Lightf.* and *Pet.* It corresponds exactly with some of my specimens of *B. muralis*. SR.

fords by distillation an ardent spirit. The rind is acrimonious. If the roots be kept in sand, or in a cellar, during the winter, they send out white shoots and yellowish leaves, which being rather sweet and not unpleasant to the palate, are used as salad, when other esculent plants are not to be had. But the greatest use of Turneps is in feeding oxen and sheep in the winter.

\* Early in the spring the sea cabbage is preferred before the cultivated kinds; but, when gathered on the sea coast, it must be boiled in two waters, to take away the saltiness. The roots may be eaten like those of the preceding species, but they are not so tender. The different varieties of cultivated garden cabbage originate from this, all of which are much in use at our tables. The red cabbage is chiefly used for pickling. In some countries the white cabbages are buried when full grown in the autumn, and thus preserved all winter. The Germans cut them to pieces, and along with some aromatic herbs and salt, press them close down in a tub, where they soon ferment, and are then eaten under the name of Sour Crout.—Thus taken it is supposed to discuss the tendency to scorbutic disorders, and in the form of cataplasm, may be advantageously applied to the breasts to prevent the coagulation of the milk. E.) The cabbage, whilst young, is good for the *Chrysomela saltatoria*, and afterwards for the *Papilio Brassica*. The former may be kept off by strewing the ground with soot; and it is said the latter will not touch the plants if they be whipped with the green boughs of elder. If cabbages be sowed or planted for several years together in the same soil, the heads become smaller and the roots knotty. This is occasioned by the larvæ of flies.—A horse eat the leaves, but did not seem fond of them.

Cows grow fat upon them.

Very much accords with *Sisymbrium murale* in the size of the plant, leaves, flowers, and fruit. *Root* perennial. *Leaves* with almost winged clefts, being divided more than half way to the mid-rib, strap-shaped, beset with a few hairs; wings remote bluntnish, mostly seven. *Stalks* upright, smooth. *Calyx* closed. *Petals* yellow, entire. LINN. *Stems* smooth, reclining, from the center of the leaves; ten or twelve inches long, with commonly one leaf towards the base. *Root-leaves* with generally a few scattered hairs, especially about their leaf-stalks; *wings* five or six pair, oval, pointed, deeply indented, some alternate, some opposite, increasing in size towards the end, the terminating one larger, with three slight lobes, which are indented; the *stem-leaf* with strap-shaped wings, a little indented on their lower edges. *Calyx* hairy at the top. *Petals* twice as long as the calyx. LIGHTFOOT.

*Dwarf Sea Cabbage. Isle of Man Cabbage. Sisymbrium monense.* E. bot. Sea shores in sandy soil. Between Ramsey and the town. Sella Fields Sea-bank, Cumberland, between Marsh Grainge and the Isle of Walney, near Abermeny Ferry, Anglesea. RAY. Isles of Bute, Skye, and Arran, and in Cantire. [Walney Isle. Mr. ATKINSON.] B. May—July.\*

SINAPIS. *Cal.* expanding: *bloss.* claws upright; *glands* between the shorter stamens and the pistil, and between the longer stamens and the calyx: *pod* beaked, opening; valves shorter than the partition.

arven'sis.

S. Pods with many angles, swoln and bunched out by the seeds; smooth, longer than the 2-edged beak.

Curt. 321—Fl. dan. 753—E. bot. 1748—Fuchs. 257—J. B. ii. 844—Dod. 675. 1—Ger. em. 233. 2—Ger. 199—Lob. obs. 99. 1, and ic. i. 198. 2—Park. 862. 3—H. ox. iii. 3. 7—Pct. 45. 12.

*Pod* sometimes a little hairy. *Calyx* leaves slightly compressed. RELHAN. Differs from *Raphanus Raphanistrum* as follows:—*Stem* one third taller, finely scored, commonly of a deep red, often simple. *Flowers* smaller. *Calyx* spreading.

\* The different species afford nourishment to the *Papilio Brassica*, *Rape*, and *Napi*; *Phalæna subginosa*; *Aphis Brassicæ*; and *Chrysomela Hyoscyama*.

*Petals* always yellow, and without veins. *Stem* green, rough with a few very stiff hairs. *Leaves* without any cast of sea green. *Pods* swollen, not angular. *Calyx* yellow, half as long as the petals. Mr. WOODWARD. *Leaves* harsh; deeply indented and serrated. *Seeds* brown.

*Wild Mustard*, or *Charlock*. *Corn Cale*. Cornfields, and borders of cornfields. A. May.\*

Mr. PITT, in his Staffordshire Reports, observes that the name Charlock, or as it is more commonly pronounced in the midland counties, Kedlock, is not confined to one plant only, but is indiscriminately applied to *Sinapis nigra*, *Brassica Napus*, *Sinapis arvensis*, and *Raphanus Raphanistrum*, as one or other of these abound more or less in different places.

S. Pods rough with hair; beak very long, slanting, sword-shaped; (leaves wing-cleft. E.) al'ba.

Curt. 322—Blackw. 29—E. bot. 1677—Ger. em. 244. 4—Pet. 45. 10—Fuchs. 538—J. B. ii. 856—Trag. 101. 1—Lonic. i. 164. 2—Matth. 563—Dod. 707. 1—Lob. obs. 100. 2, and ic. i. 203. 1—Ger. en. 244. 2—H. or. iii. 3, row 1. 2.

*Bunches* and *fruit-stalks* scored. *Pods* with three knots, somewhat keeled; hairs expanding; *beak* keeled, even as far as the last joint. LINN.—*Leaves* rough, all deeply indented or lobed, and frequently with a pair of small wings on the leaf-stalk. *Pods* bunched with the seeds; *beak* scored, dark green, with a few hairs. Mr. WOODWARD. *Stem* strong, hard, nearly cylindrical, branched, set with strong hairs pointing downwards. *Leaves* rough with strong hairs, deeply divided, segments three or five, the terminating one very broad, large, toothed, and indented. *Fruit-stalks* set with strong hairs pointing downwards. *Calyx* leaves upright, opening a little at the top, yellow or purplish, smooth or hispid. *Petals*, limb inversely egg-shaped, yellow. *Seeds* white or reddish.

*White Mustard*. Cornfields and road sides. A. Aug.†

\* The Scandinavians boil and eat it as cabbage, and in Ireland the tender tops are collected for the same purpose.—Cows, goats, and swine eat it. Sheep are very fond of it. Horses generally refuse it.

† It is sown in the winter, and early in the spring, to supply our tables with sallading. The seeds have nearly the same properties as those of the next species.



nigra

S. Pods smooth, laid flat to the spike-stalk; (upper leaves linear-lanceolate, entire, smooth. E. bot. E.)

E. bot. 969—Woodv. 151—Blackw. 446—J. B. ii. 855.

*Stem* very much branched; *branches* distant, expanding. *Root-leaves* rough; *stem-leaves* smooth. *Pods* short, parallel. RELHAN. *Stem* cylindrical, scored, upper part smooth. *Leaves*, the upper frequently simple, spear-shaped, sharply toothed. *Pods* slightly hairy; *beak* smooth. *Fruit-stalks* short. Mr. WOODWARD. *Calyx* yellow. *Blossom* pale yellow.

(Dr. Goodenough in *Fl. Brit.* remarks that this species may at once be distinguished from its congeners by the leaves of the lesser branches being pendulous. E.)

*Common Mustard.* Cornfields, ditch banks, road sides, [and banks of the Severn. St.] A. June.\*

RAPH'ANUS. *Cal.* close, upright; *nect. glands* 2 between the shorter stamens and the pistil, and 2 between the longer stamens and the calyx: *pod* round, but protuberating, with cells, and nearly jointed.

Raphanis'-  
trum.

R: Pods round, jointed, smooth, of 1 cell, LINN. originally of 2 cells, but, as the seeds increase in size, the partition becomes obliterated. HALL.

Curt. 267—E. bot. 856—Linn. amæn. acad. vi. at. p. 451—*Fl. dan.* 678—J. B. ii. 851. 1—Ger. 179. 2—Lob. ic. i. 199. 1—Ger. 240. 1—Pet. 46. 10—Ger. 199—Park. 863. 4—H. ox. iii. 13. 1 and 2—Park. 863. 5—H. ox. iii. 13, row 2. 4. f. 4.

\* The seeds, reduced to powder, make the common mustard so much in request at our tables. They yield a considerable quantity of expressed oil, which partakes but little of the acrimony of the plant. The seeds, when unbruised, impart but little taste to boiling water. Taken inwardly, in the quantity of a meat spoonful or more, they gently loosen the bowels, and are of service in asthma, chronic rheumatism, and palsy. The powdered seeds curdle milk, and give a strong impregnation to boiling water. This infusion, taken in considerable quantity, vomits; in smaller doses, it is an useful aperient and diuretic. Cataplasms, formed with crumb of bread, vinegar, and powdered mustard seed, are very commonly applied to the soles of the feet, as stimulants, in fevers that require such treatment; they are used with advantage, topically applied, in fixed rheumatic and sciatic pains. Upon the whole, wherever we want a strong stimulus, that acts upon the nervous system, without exciting much heat, we know none preferable to mustard seed. Its acrimony consists in an essential oil.—The *Phalæna fuliginosa* lives upon the different species.

*Stem* rough with transparent hairs pointing backwards. *Leaves* sometimes rough with hairs; the lower lyre-shaped, wings alternate, heart-oblong, serrated, the lowermost very small, the odd one very large, rounded at the end, scalloped; the upper oblong-spear-shaped, scallop-serrated. *Leaf-stalks* generally rough with hairs. *Calyx* rough with white hairs, very smooth at the base. *Blossom* generally yellow, but sometimes white, or violet, with blackish veins. *Pod*, joints falling off separately. LINN. Differs from the *Sinapis arvensis* as follows: *Stems* even, and usually sea-green, generally branched from the bottom. *Calyx* upright, close. *Blossom* white, and pale red, as well as yellow, and all in general striped with purplish veins. CURTIS.—*Plant* generally of a sea-green cast. *Petals* of whatever colour, veined with dark lines. Mr. WOODWARD.

*White-flowered, or Jointed Charlock. Wild Raddish.* Amongst corn. A. June—July.\*

(Var. 1. Radical leaves interruptedly lyrate; all the leaves rough, and rather sharply toothed. Blossom more yellow, and less veiny than in the preceding. Root large and succulent, conjectured to be biennial, or sometimes triennial. Always grows near the sea. E. bot.

*Sea Raddish. Raphanus maritimus.* E. bot. 1643.—*R. Raphanistrum* γ. Fl. Brit. On the beach three miles from the Mull of Galloway. Mr. J. MACKAY. Isle of Bute, so long ago as 1753, by the late Rev. Dr. WALKER, Professor of Natural History at Edinburgh, who cultivated it as an esculent root preferable to Horse Raddish, and who found cattle to be fond of the herbage. Rocks near Beachy Head, Sussex. Messrs. TURNER and BORRER. E.)

\* In wet seasons it grows in great quantity amongst the barley in Sweden, and the common people who eat barley bread, are afflicted with very violent convulsive complaints in those provinces, and in those seasons wherein this plant abounds. *Amœn. acad.* vi. 430.—Horses eat it. Cows refuse it.

## CLASS XVI.

## MONADELPHIA.

## TRIANDRIA.

JUNIP'ERUS. M. and fem. flowers on different plants.

M. *Cal.* a catkin: *Bloss.* none.

F. *Cal.* with 3 divisions: *Bloss.* 3 petals: *Styles* 3:  
*Berry* beneath; 3-seeded; the calyx at the base.

## DECANDRIA.

GERA'NIUM. *Pistil* 1: *Common Receptacle* beaked;  
*Caps.* 5 dry berries; with a long beak; twisting.

[*Spartium. Genista. Anthyllis. Ulex. Ononis. Oxalis.*]

## POLYANDRIA.

(1) *Pistil* 1.

TAX'US. Male and fem. flowers on different plants: *Cal.*  
 4-leaved: *Bloss.* none.

M. *Anthers* 8-cleft.

F. *Summit* 1: *Berry* 1-seeded: *Seed* naked at the end.

(2) *Pistils* 2.

PI'NUS. *Bloss.* M. and fem. flowers on the same plant:  
*Bloss.* none.

M. *Cal.* 4-leaved.

F. a cone-like *Catkin*: *Nuts* 2; with a membranaceous  
 wing.

(3) *Pistils* many.

LAVATE'RA. *Outer Calyx* 3-cleft: *Seed-coats* in whirls;  
 1 seed in each.

**MAL'VA.** *Outer Calyx* 3 leaves: *Seed-coats* several; in whirls; 1 seed in each.

**ALTHÆ'A.** *Outer Calyx* 9-cleft: *Seed-coats* several; in whirls; 1 seed in each.

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## TRIANDRIA.

**JUNIP'ERUS.** Male and female flowers distinct.

Male. *Cal.* a scale of the catkin: *Bloss.* none.

Fem. *Cal.* with 3 divisions: *petals* 3: *pistils* 3: *drupa* juicy, closed, 1-celled, many-seeded; with 3 tubercles formerly the calyx.

J. Leaves 3 together, expanding; sharp-pointed; longer commu'nis. than the berry.

*Fl. Ross.* i. 54—*Fl. dan.* 1119—*E. bot.* 1100—*Ludw.* 189—*Mill. ill.*—*Blackw.* 187—*Sheldr.* 70—*Woodv.* 95—*Kniph.* 1—*Gars.* 88—*Tourn.* 361. 2—*Matth.* 121—*Ger.* 1189. 1—*Fuchs.* 88—*J. B. i. b.* 293—*Trag.* 1074—*Lonic.* i. 24—*Cam. epit.* 53—*Dod.* 852—*Lob. obs.* 628. 2, and *ic.* ii. 222. 2—*Ger. ém.* 1372. 1—*Park.* 1029. 1.

(A low shrub, much branched, rigid, smooth, evergreen. *Juice* of the whole plant resinous. *Leaves* sessile, channeled, very entire, sharp-pointed and prickly, glaucous on the upper surface. *Seeds* three, angular. *Fl. Brit. E.*) *Anthers* under the lateral scales often five. LEERS. *Berry* continuing two years; green, at length blackish purple. RELHAN. *Bark* reddish. *Berries* bluish black.

*Common Juniper.* Heaths (and open hilly spots on a limestone soil. E.) [Near Berkhamsted, Hertfordshire, and abundantly on a common between Blenheim and Ditchley, Oxfordshire. Mr. WOODWARD. On heaths, West of Bishop's Aukland. Mr. ROBSON.] (Juniper-hill between Middleton-stony and Oxford. Dr. ABBOT in *E. bot.* On the edges of Shakespeare's Cliff, and other the highest precipices overhanging the sea between Dover and Folkstone. E.) S. May.\*

\* It grows in fertile or in barren soils; on hills or in valleys; in open sandy plains, or in moist and close woods. On the sides of hills its trunk grows long; but on the tops of rocky mountains and on bogs it is little more



Var. 2. *alpine*. Leaves broader and thicker. Berries longer, more oval than spherical. LIGHTFOOT.

*J. B. i. b. 302. 1-Clus. i. 38. 2-Ger. em. 1372. 3.*

On the summit of Snowdon, and the mountains of Westmoreland. On Kendal Fell. *R. Syn.* [About 200 yards South West of Llyn y Cwn, Caernarvonshire. Mr. GRIFFITH.]

## DECANDRIA.

**GERA'NIUM.** *Cal.* with 5 divisions : *bloss.* 5 petals ; *pistil* 1 : *summits* 5, common receptacle beaked : *seeds* 5, with a very long twisted tail.

(2) *Blossoms regular ; fruit-stalks 1-flowered.*

sanguin'eum. G. (Stalks single-flowered ; leaves roundish, in 5 or 7 deeply serrated lobes, each of which is 3-cleft. E. bot. E.)

*Fl. dan. 1107-E. bot. 272-Kniph. 7-Walc.-Clus ii. 102. 1-Lob. ic. i. 660. 1-Ger. em. 945. 2-Pet. 64. 9-Fuchs. 209-J. B. iii. 478. 2-Lonic. i. 152. 2-Trag. 348-Park. par. 227. 6.*

than a shrub. LINN.—('A great deal of it grows by the side of the road, between the General's Hut and Inverness, and indeed many of the neighbouring hills are almost covered with it : a ship load of the berries used annually to be sent from hence to Holland.' *Garnett's Tour. E.*)—It is easily transplanted, and it bears cropping. Grass will not grow beneath it, but the *Avena pratensis* destroys it.—The wood is hard and durable. The bark may be made into ropes. The berries are two years in ripening. When bruised they afford a pleasant diuretic liquor, but it is not easy to prevent its growing sour. It is esteemed a good antiscorbutic. The Swedes prepare an extract from the berries which is sometimes eaten for breakfast, but it is fitter for a medicine than for food. The spirit impregnated with the essential oil of these berries is every where known by the name of Gin, or Juniper water. The berries sometimes appear in an uncommon form, the leaves of the calyx grow double the usual size ; approaching, but not closing ; and the three petals fit exactly close, so as to keep the air from the *Tipulæ Juniperi*, which inhabit them.—Gum Sandarach, more commonly called Pounce, is the product of this tree. Horses, sheep, and goats eat it. *Cimex juniperinus*, *Thrips juniperina*, and *Coccinella 9-punctata* feed upon it. (Sir John Pringle entitles it a resinous and antiseptic vegetable, and recommends the burning the wood or berries of it, for the purpose of purifying the air in hospitals and other sick rooms. E)

*Stem* hairy, from a foot to a cubit high. *Leaves* above rough, hairy underneath and on the edge. *Fruit-stalks* three inches long, hairy, with a knot and two floral-leaves about the middle. RELHAN. *Calyx* leaves oval, with membranaceous reddish edges, and terminated by a short red awn. *Petals* inversely heart-shaped, very large, equal, pale red, with deep red veins. Mr. WOODWARD. Whole *plant* set with white expanding hairs. *Leaves* opposite. *Petals* hairy at the base. (The circumstance of the stem being upright or trailing in these species, affords no certain characteristic. E.)

*Bloody Cranesbill*. Limestone Rocks, stony places, dry pastures, heaths, and thickets, in mountainous situations. Arthur's Seat, Edinburgh. LIGHTFOOT.—Rocks near the sea, Cornwall. Mr. WATT.—Near Buxton, Derbyshire, and Rosebeck in Low Furness, Lancashire. On a Heath near Woodbridge, Suffolk. Mr. WOODWARD.—(Sand hills, North Shore, near Liverpool. Dr. BOSTOCK. E.)—St. Vincent's Rocks, Bristol. On the left side the lower road from Cheltenham, to Gloucester, two miles from the former place.

P. July—Sept.

Var. 2. *Leaves* larger, paler, and more deeply divided. RAY.

*Pet.* 64. 10.

Banks of the Devil's Ditch. RAY, RELHAN, and the left side of Dallingham Gap going from Canvass-hall. RAY.

(Var. 3. General appearance different from the preceding varieties. All the parts of the plant evidently smaller; the leaves strikingly more compact and star-like; the peduncles much less hairy. The stem has been described as trailing or upright in direct contradiction by four different authors; on examining several specimens we find the stems greatly vary in this respect. This plant preserves its peculiar appearance in gardens, as proved by Mr. Sole at Bath, and also by Mr. Curtis, who therefore judged it distinct, E.)

*Dill. elth.* 136. 163—*Pet.* 64. 11.

*Flowers* white, with reddish veins. RAY. *Leaves* smaller and more finely divided than in *G. sanguineum*; the flowers much smaller. The figure of Dillenius too large. Mr. WOODWARD. *Blossom* sometimes pale flesh colour with red veins. Dr. STOKES. Grows intermixed with the *G. sanguineum* in the Isle of Walney, but the flower and every part of the plant is a third smaller; it grows upright, whilst the *G. sanguineum* creeps upon the ground. Mr. ATKINSON. *G. sanguineum*  $\beta$ . Linn.  $\gamma$

HUDS. *G. hæmatodes Lancastriense*, flore, eleganter striato. DILL. RAY; who remarks that it does not change when cultivated, that it is a smaller and more humble plant than the *G. sanguineum*, and that for these and other reasons he believes it a distinct species.

*G. sanguineum* γ. Fl. Brit. *G. Lancastriense*. WITH. Ed. 3 and 4. Isle of Walney, Lancashire, upon the bank, in a sandy soil. P. July—Aug.

(2) *Petals notched, or cloven; fruit-stalks 2-flowered.*

PERENNIAL.

pyrenaicum. *G.* Petals 2-lobed; leaves circular, lower ones with 5, upper with 3 lobes; lobes blunt, 3-cleft.

*Curt.* 159—*E. bot.* 405—*Ger. prov.* 16. 2.

*Stem* hairy. *Leaves* hairy, the lower with mostly seven lobes; lobes with three-clefts, segments rounded or blunt, the middle one frequently scalloped, the upper with mostly three lobes; lobes with three clefts, more expanding than in the lower leaves. *Fruit-stalks* longer than the leaves. *Floral-leaves* pointed, four to each fruit-stalk. *Calyx* leaves broad and short. *Petals* as long again as the calyx, deeply cloven; lobes roundish, entire. WOODWARD. *Stem* forked twice or thrice. *Fruit-stalks* solitary, axillary. *St.* *Hairs* on the seed-coats few, upright. *Petals* nearly divided down to the base and much larger than in the *G. pusillum*, the seed-coats of which are rather silky than hairy, the hairs lying close. MR. AFZELIUS.

*Mountain Crane'sbill.* Meadows and pastures. On the banks of the river between Bingley and Keighley, Yorkshire. Near Enfield; and about Brompton, Chelsea, and in the dry part of the pasturage in Battersea Fields. [Near Oxford. MR. WOODWARD.] (In a lane leading from the south-east part of Edinburgh to the King's Park, abundantly. DR. SMITH. Hedge opposite Rose Hall, Beccles. MR. F. TURNER, in *Bot. Guide.* Hebburn Ballast Hills, Durham. MR. WINCH. In Litton, and Monsal Dales, near Tideswell, Derbyshire. MR. O. SIMS. *Bot. Guide.* Rubbish at Luton, Hoe: and Ford End, Bedfordshire. ABBOT. E.) P. June—July.

Var. 2. Blossoms white.

In Chelsea garden, growing as a weed. CURTIS.

nodo'sum. *G.* Stem 4-cornered, upright; leaves 5 or 3-lobed, toothed, rough above, glossy underneath; petals scored, notched.

*E. bot.* 1091—*Clus.* ii. 101. 1—*Ger. em.* 947. 2—*Park.* 703.  
2—*J. B.* iii. 478. 1—*Pet.* 65. 4—*H. ox.* v. 16. 22—*Clus.* ii.  
101. 2.

*Stems* spreading, more compressed than in *G. striatum*.  
*Petals* flesh-coloured, with three purple scores, running half  
way to the point. LINN. *Flowers* before blossoming hanging  
down, afterwards upright. *Stems* smooth, shining, swollen at  
the joints. *Leaves*, the lower with five lobes, the upper with  
three lobes, opposite; lobes spear-shaped, straddling, entire at  
the base, irregularly serrated upwards, with three strong nearly  
parallel ribs, and with a few short stiff hairs arising from glands.  
*Stipule* and *flower-scales* alike, small, pointed. *Fruit-stalks*  
short. *Calyx* leaves awned, smooth. *Petals* red, scolloped;  
scollops blunt, regular. Mr. WOODWARD.

*Knotty Crane'sbill.* Mountainous situations in Cumberland.  
RAY. (Gathered in rather a hilly situation between Hatfield  
and Welwyn, Hertfordshire, by the Rev. Dr. ABBOT. *E. bot.*  
E.) P. July—Aug.

*G.* Stem upright; leaves 5-lobed, cut-serrated; petals en-sylvaticum.  
tire, or only slightly notched.

*E. bot.* 121—*Rose* 1, at p. 472, *G. palustre*—*Fl. dan.* 124—  
*Cam. epit.* 602—*Park.* 705. 5—*H. ox.* v. 16. 25.

*Panicle* forked, nearly level. *Pedicles* much longer than  
the involucre. *Calyx* awned. As soon as the flowering is  
over it becomes upright, with the points bent back. *Blossom*  
bell-shaped, expanding, violet-coloured, sometimes white, or  
variegated with white. LINN. *Flowers* before blossoming hang-  
ing down, afterwards upright. *Leaves* slightly hairy, the lower  
with seven lobes, the middle with five, the upper with three.  
*Fruit-stalks* with sometimes more than two flowers. *Floral-*  
*leaves* awl-shaped, small. *Calyx* and *fruit-stalks* very hairy.  
*Petals* large. Mr. WOODWARD. *Hairs* on the flowering stems,  
edges of the leaves, and on the calyx, ending in small globules.  
*Leaves*, segments terminating in small fleshy glands; the up-  
per sitting. *Calyxes* ribbed, membranaceous at the edge, end-  
ing in spit-points. *Petals* purple, slightly notched at the end,  
a little woolly at the base.

*Wood Crane'sbill.* *Geranium batrachoides alterum.* GER.  
*em.* 942. (Str.) Mountainous thickets and pastures in West-  
moreland, Cumberland, and Yorkshire, and sides of rivers in  
rocky and shady places. [Holt Wood in Leziate, near Lynn,  
Norfolk. Mr. CROWE. About Aysgarth Force, Wensleydale.  
Mr. WOOD. Near Coniston, Lancashire, and elsewhere in the



North. Mr. WOODWARD. Corby Castle, Cumberland. St. Very common in moist shady places in most parts of the county of Durham, and the petals are as frequently found entire as slightly notched, nor are the leaves target-shaped as described by Linnæus. Mr. ROBSON. Near Hales Owen, Shropshire.]

P. June—July.

Var. 2. Dwarf, with very large flowers. LIGHTFOOT.  
Scotland.

(3) *Petals notched or cloven: fruit-stalks 2-flowered.*  
ANNUAL.

dissect'um. G. Fruit-stalks shorter than the leaves; leaves 5-lobed, lobes 3-cleft or many-cleft; petals notched, seed-coats with soft hairs.

Curt.—E. bot. 753—Fl. dan. 936—Vaill. 15. 2—Plot. oxf. 9. 4. at p. 146—Pet. 64. 6, and 7—Fuchs. 207—J. B. iii. 474. 1—Blackw. 58. 2.

*Leaves* divided down to the leaf-stalk into five, and these again into three, segments strap-shaped, usually entire, but the middle one sometimes sub-divided. *Fruit-stalks* very short. *Flower-scales* minute. Mr. WOODWARD. *Calyx* leaves three-ribbed. *Seed-coats* beset with glandular hairs. Mr. HOLLEFEAR. *Stem* hairs pointing downwards. *Calyx* hairs viscid. CURTIS. *Calyx* awned. *Flowers* red. *Anthers* blue.

*Jagged-leaved Crane'sbill.* Road sides; borders of fields, ditch banks. Hedges about Marston and Botley Causeway, next Oxford. PLOT. Woods near Marston, Oxfordshire. RAY.

A. May—Aug.

columbi-  
num.

G. Fruit-stalks longer than the leaves; leaves 5-lobed, lobes many-cleft; calyx 5-sided; seed-coats smooth. Aiton Hort. Kew.

E. bot. 259—Vaill. 15. 4—Pet. 64. 8.

*Leaves* hairy underneath; segments strap-shaped. *Petals* nicked, with a sharp point between the lobes. LINN. *Leaves* divided quite to the leaf-stalk; segments several, subdivided. *Pedicles* very long, straddling a good deal. *Calyx* very large, bellying. WOODWARD. *Stem* hairy; hairs laid flat. Mr. ROBSON. *Leaves* a little hairy on both surfaces. *Calyx* somewhat hairy, skinny at the edges, terminated by short awns reddish at

the ends. *Petals* marked with three lines; the little tooth between the lobes not very pointed, reddish blue. *Stamens* with ten green glands at the base.

*Long-stalked Crane's-bill.* Cornfields, pastures, and hedges. [Heydon, Norfolk. Mr. BRYANT. (About Pulham and Stars-ton, Norfolk. Mr. WOODWARD. E.) St. Vincent's Rocks. In a barren gravelly soil near the entrance upon Barr-beacon from Birmingham.] A. June—Aug.

G. Leaves kidney-shaped, 7 or 5-lobed; lobes wedge-shaped, 3-cleft, bluntish; calyx awnless; seed-coat hairy. *malvæfolium.*

(*Cavanill. diss. t. 82. f. 1.*) on Gmelin's authority.

This plant seems to have been confounded sometimes with the *G. molle*, and sometimes with the *G. rotundifolium*. It differs from the former in its seed-coat being hairy and not wrinkled; from the latter in its awnless calyx and its notched petals. I have no doubt but it is the *G. pusillum* of Linnæus, represented in Ray 16. 2. (*a*) and (*b*); though that being a dwarf or starved specimen has occasioned an improper trivial name to be applied to the species, and which, if continued, would infallibly occasion a repetition of the same doubts and difficulties which have hitherto attended the subject.

I am indebted to Mr. Robson for a full grown specimen of this plant, as well as for the following description of it:—

The root throws out many cylindrical much branched stems, varying in length according to the situation and soil; procumbent when growing alone, but upright when growing among other plants, and frequently attaining the height of two feet. *Stem* and *branches* just sensibly downy and soft to the touch. *Leaves* kidney-shaped, deeply lobed, hairy, especially on the margin, and veins on the under surface: hairs expanding. *Root* and lower stem *leaves* generally seven lobed; upper *leaves* five-lobed, more deeply divided, opposite, unequal; lobes wedge-shaped, three-cleft, bluntish. *Floral-leaves* four, awl-shaped, hairy. *Fruit-stalks* alternate, axillary, upright. *Calyx* hairy, awnless. *Petals* inversely heart-shaped, bluish purple, notched; claws upright, about the length of the calyx. *Stamens* distinct at the base, five with and five without anthers. *Seed-coats* even, covered with short bristles pointing upwards. *Seeds* smooth.

OBS. Varies with leaves alternate towards the tops of the stem and branches, and with three or sometimes four flowers on a fruit-stalk. Mr. ROBSON.

*G. malvæfolium*, SCOP. but excluding his reference to Vaillant. *G. pusillum*, LINN. *Fl. Brit.* [Hedges and waste

places as common about Darlington as the *G. molle*. Mr. ROBSON.] A. June—July.

Var. 1. *pusillum*. LINN. Stem spreading; leaves kidney-shaped, fingered; lobes strap-shaped, acute.

*E. bot.* 385—*Vaill.* 15. 1—*Ray Syn.* 16. 2. *a. b.*

About two or three inches high. *Leaves* small. *Blossom* bluish, very small. *Petals* cloven, equal. Found in situations by no means barren, whence it cannot be thought merely a variety of the *G. rotundifolium*. DILL. in *R. Syn.* Resembling the *G. rotundifolium* but smaller. Lobes of the leaves acute, not blunt. *Petals* cloven, blue. *Calyx* awnless. LINN. *Stem* and *branches* covered with a very short down, extremely soft and velvet-like when drawn through the fingers. *Leaves* opposite. *Fruit-stalks* alternate, axillary. WOODWARD.

High ditch banks. At Low Layton, early in spring. DILL. A.

*molle*.

*G.* *Fruit-stalks* and *floral-leaves* alternate; *petals* cloven; *calyx* awnless; *stem* somewhat upright.

*Curt.* 141—*E. bot.* 778—*Fl. dan.* 679—*Vaill.* 15. 3—*Pet.* 64. 2.

*Pedicles* declining. *Flower-scales* cloven. *Calyx* scarcely awned, shorter than the blossom. *Petals* slightly cloven, without a tooth between the lobes. LINN. *Stem* hairy, hairs expanding. Mr. ROBSON. Trailing when growing alone, upright when amongst grass or other plants. *Blossom* sometimes almost as large as those of *G. pyrenaicum*. CURTIS. *Root-leaves* kidney-shaped, with a circular outline, with seven lobes, lobes with three clefts; the upper more distinctly kidney-shaped, and more finely divided. In the above it agrees with *G. rotundifolium*, but differs in the *stem* and *branches* being clothed with long soft hairs expanding horizontally. WOODWARD. *Flowers* purplish red; sometimes white. RAY. *Seeds* marked with transverse wrinkles, but in the *G. rotundifolium* they are dotted. In the *G. rotundifolium* the petals are entire, but cloven in the *G. molle*. Mr. AFZELIUS. *Stem-leaves* five-lobed; lobes wedge-shaped, blunt. *Fruit-stalks* opposite the leaves. *Glands* five, on the outside of the anther-bearing filaments, green.

*Soft Crane'sbill.* *Dove's-foot Crane'sbill.* Dry banks, corn-fields, meadows, and pastures, in a sandy soil.

A. April—Oct.

(4) *Petals entire; fruit-stalks 2-flowered.* PERENNIAL.

G. Fruit-stalks solitary, 2-flowered, opposite the leaves; *phæ'um*. calyx somewhat awned; stem upright; petals waved.

*E. bot.* 322—*Fl. dan.* 987—*Kniph.* 5—*Walc.—Clus.* ii. 99. 1  
—*Ger. em.* 942. 3—*Park.* 704. 3.

*Stems* nearly cylindrical, woolly below, from eighteen inches to two feet high; joints large, tinged with red. *Leaves*, the lower with six or seven lobes, the middle ones with four or five, the uppermost three or four; lobes serrated. *Fruit-stalks* forked, with two flowers. *Calyx* thick set with short hairs, terminated by little globules, interspersed with a few long, soft, woolly, hairs; *leaves* with three longitudinal lines, and terminated by little blunt callous substances. *Petals* egg-shaped but angular, blackish purple, shining; *claws* white, marked with five lines, and woolly. *Filaments* purple, broad and woolly at the base, slightly united by means of five green glandular substances placed on the outside of them; after flowering turned outwards. *Anthers* whitish, the seams marked with a purple line. *Pollen* greenish yellow. *Germen* woolly. *Style* green, shorter than the stamens till the time of flowering. *Seed-coats* hairy.

*Dusky Crane's-bill.* Mountainous pastures. [In a dingle at Downing, Flintshire. *Rev. S. DICKENSON.* In woods about Darlington. *Mr. ROBSON.* Near Cradley, Worcestershire. (On a bank at Ash-Bocking, Suffolk. *Mrs. COBBOLD*, in *Fl. Brit.* About Newburgh, Yorkshire. *Rev. Archdeacon PIERSON. ditto.* At Alderbury, near Salisbury. *Dr. MATON.* At Tovell, in the old Valley by the Fulling Mill, Kent. *RAY.* Frequent in Yorkshire and other hilly counties. E.)

P. May—June.

G. Leaf-stalks nearly central; leaves with many divisions, praten'se. wrinkled; lobes with winged clefts, acute; petals entire.

*Curt.* 250—*E. bot.* 404.—*Kniph.* 5—*Matth.* 857—*Clus.* ii 100.  
1—*Dod.* 63. 2—*Lob. obs.* 376. 3, and *ic.* i. 659. 2—*Ger.*  
*em.* 943. 1—*Pet.* 65. 7—*Walc.—Ger.* 797. 2—*Fuchs.* 208—  
*J. B.* iii. 475—*H. or.* v. 16. 14.

*Pedicle* while it is in blossom not longer than the *involucrum*. *Calyx* awned, after flowering closed, nodding. *Blos-*



som flat. *Petals* blue, rounded at the end, not nicked. *Style* longer than the stamens. Begins to flower when the *G. sylvaticum* is going out. LINN. *Stem* two to three feet high. *Leaves* with seven to five divisions; segments lobed, deeply toothed, hairy, with strong ribs underneath; those of the upper leaves almost strap-shaped. *Leaf-stalks* long. *Floral-leaves* four, spear-shaped, pointed. *Fruit-stalks* very short, downy. *Petals* very large, blue, or white. WOODWARD. *Stems* forked, tinged more or less with red; hairs on the upper branches white, and terminated by minute dark red globules. *Leaf-stalks* nearly central. *Leaves* with five to seven divisions; segments with winged clefts, which are more or less jagged and toothed. *Calyx* ribbed, membranaceous at the edges, terminated by spit-points, thick set with fine white hairs tipped by scarlet globules. *Petals* inversely egg-shaped, with seven to nine whitish lines, and a little hairy at the base. *Filaments* very broad, and somewhat concave at the base. *Anthers* purple. *Pollen* yellow.

*Crowfoot Crane'sbill*. Moistish meadows and pastures.

P. June—July.

maritimum. G. *Stem* trailing; leaves heart-egg-shaped, scalloped, cut, rough: fruit-stalks 1 to 3 flowered; stamens 5.

Dicks. h. s.—E. bot. 646.—Phuk. 31. 4—Pet. 65. 1—H. ox. v. 35. row. 3. f. 2.

*Umbel* often leafy. *Petals* entire, often wanting. *Fruit-stalks* with often two flowers. LINN. *Stems* branched, lying close to the ground. *Root-leaves* on long fruit-stalks, spreading in a circle on the ground, hairy, variously cut and jagged, sometimes nearly lobed; *stem-leaves* similar. *Fruit-stalks* shorter than the leaves. *Flowers* one to three, small. *Beaks* very small, not exceeding half an inch in length. WOODWARD. *Leaf-stalks* much longer than the leaves. *Fruit-stalks* compressed. *Filaments* spear-shaped. *Anthers* purple. *Sunmits* greenish yellow. *Blossoms* pale red.

*Sea Crane'sbill*. *Erodium maritimum*. E. bot. and Fl. Brit. Sandy sea shores, common. [Acle, Norfolk. Mr. CROWE. Rocks at Portawen, Cornwall. Mr. WATT. Sandy commons between Enville and Bewdley, Worcestershire, always in a South aspect. Mr. HUNTER. Leigh Down, near Bristol. Mr. SWAYNE. Sea coast Teignmouth, with flowers from two to four on each fruit-stalk.]

P. June—Oct.

(5) *Petals* entire: fruit-stalks 2-flowered. ANNUAL.

lu'idum.

G. *Calyx* pyramidal, the angles raised and wrinkled; leaves roundish, 5-lobed.

*Fl. dan.* 218—*E. bot.* 75—*Kniph.* 11—*Thal.* 5—*J. B.* iii. 481—*Park.* 707. 9—*Walc.*—*Pet.* 64. 12—*H. ox.* v. 15. 6.

*Stems* shining, yet slightly hairy. *Leaves* the same, kidney-shaped, with mostly five lobes: lobes with three lobes, the middle one with usually three scollops, the side ones entire; in rocky situations only half an inch broad, and not so much divided. *Pedicles* wide apart. *Flower-scales* very minute. Mr. WOODWARD. *Seed-coat* with several rugged longitudinal ribs, hairy at the top. *E. bot.* Whole *plant* often assuming a dark purplish red colour like the *G. robertianum*. *Stem* branched. *Calyx* not quite equal. *Petals* rose red.

*Shining Crane's-bill.* Walls, roofs, rocky places, dry banks, and shady places, in a sandy soil, [and frequently among corn on a chalky soil, and in exposed situations, as near Stamford; Bury, Suffolk; common in the North. Mr. WOODWARD.—Abundant about the entrance of Peak's Hole, Derbyshire.]

A. June—Aug.

*G.* *Petals* entire, as long as the calyx; stem spreading; rotundifoliate. *Leaves* kidney-shaped, cut; seed-coat even, hairy; *Stem* round. *Seeds* reticulated. *E. bot.*

*E. bot.* 157—*Pet.* 64. 4. and 3—*Fuchs.* 205—*J. B.* iii. 473—*Ger.* 793—*Walc.*—*Matth.* 855—*Dod.* 61. 2—*Lob. obs.* 376. 2, and *ic.* i. 658. 1—*Ger. em.* 938—*Park.* 706. 2—*Pet.* 64. 1—*H. ox.* v. 15. 2.

*Stem* widely dividing, cylindrical, downy, clammy. *Leaves* rounded, soft, downy, somewhat clammy, especially underneath, lobed, with a red point in the hollows. *Leaf-stalks* reddish brown. *Calyx* awned, wrinkled, open, with three longitudinal wrinkles. *Petals* wedge-shaped, very blunt, with three reddish brown scores at the base, the under surface not lying upon, but raised from the calyx. *Anthers* yellow. LINN. *Stipulae* spear-shaped; floral-leaves always of a deep red. Mr. WOODWARD. *Stem* velvety. Mr. ROBSON. *Seeds* dotted. *Petals* entire. These circumstances at once distinguish it from the *G. molle*. Mr. AFZELIUS. *Flowers* purplish flesh colour, sometimes white.

*Round-leaved Crane's-bill.* Walls, roofs, ditch banks, and sandy pastures, about Bath, Bristol, Battersea, Wandsworth, Mortlake, and Kew. [Suffolk, common. Mr. WOODWARD. St. Vincent's Rocks, Bristol.] (On old walls about Hampton, Claverton, and Hinton, in Somersetshire. Mr. SOLE. Common on walls in Oxford. Rough and sterile places about Garn, Denbigh. Mr. GRIFFITH. E.)

A. May—July.

*Obs.* The *G. columbinum*, *malvæfolium*, *molle*, and *rotundifolium*, whose distinctions have occasioned much trouble, may be clearly understood by attending to the following circumstances.

*G. columbinum*. Its awned calyx distinguishes it from the *molle* and the *malvæfolium*, and its notched petals from the *rotundifolium*.

— *malvæfolium*. Its awnless calyx distinguishes it from the *columbinum*, its hairy seed-coat from the *molle*, and its notched petals from the *rotundifolium*.

— *molle*. Its awnless calyx distinguishes it from the *columbinum*, its hairless and wrinkled seed-coat from the *malvæfolium*, and its notched petals from the *rotundifolium*.

— *rotundifolium*. Its entire petals and its dotted seeds distinguish it from the other three.

Should any further distinctions be necessary consult an ingenious paper in *Gent. Mag.* p. 487, for the year 1797.

*robertia-*  
*num*.

*G.* Leaflets by fives or by threes, lobes wing-cleft; calyx with 10 angles.

*Curt.-Walc.-Blackw.* 480—*E. bot.* 1486—*Lonic.* i. 152. 1—*Fl. dan.* 694—*Dod.* 62—*Lob. obs.* 375. 1, and *ic.* i. 657. 2—*Ger. em.* 939, and 945. 5—*Park.* 710. 8—*H. ox.* v. 15. 11—*Pet.* 65. 5—*Fuchs.* 206—*Trag.* 108—*J. B.* iii. 489—*Matth.* 858.

*Calyx* hairy, the 10 angles formed by the first and third outer leaves being each folded into three keel-like angles, the second and fifth each into one, and the fourth into two. *Petals* entire. *Scent* rank. The whole plant sometimes red. *LINN.* *Leaflets* of the lower leaves distinct, those of the upper confluent. *Fruit-stalks* very long. *Pedicles* short. *Mr. Woodward.* Whole plant beset with pellucid hairs, but becoming smoother as the plant grows older. *Upper leaves* divided into three parts, the lowermost into five; leaflets united at the base, with winged clefts; segments terminated by a little sharp thorn. *Stems* tinged with red at the joints. *Calyx* awned, the angles more evident as the seeds ripen. *Petals*, claws long, border a little ragged, with three faint white lines. *Filaments* not very evidently united. *Anthers* red. *Pollen* yellow. *Style* hairy. *Summits* a fine crimson, *Stem* branched, spreading. *Blossom* red, sometimes white.

*Herb Robert.* *Stockbill.* Walls, hedges, rubbish, and stony places.

A. April—Aug.\*

Var. 2. White flowered.

\* (In North Wales, particularly in the neighbourhood of Rhydar, this plant has acquired much celebrity as a remedy for Nephritic or Calculous complaints. A handful of the dried leaves may be infused as tea, and a tea-cup full taken occasionally. *Mr. WATT. E*)

[Road from Lichfield to Stafford, a little beyond the 4th mile stone, plentifully. Mr. SAVILLE. Den of Portend, near the Loch of Monteith. Mr. BROWN. Near Exeter. Mr. MARTYN.]

Var. 3. *shining*. Whole plant shining. Leaves smaller and more deeply divided. WOODWARD.

*Pet.* 65. 5. Mr. WOODWARD.

Near Swanning, Dorsetshire. Shore of Selsey Island,

(6) *Fruit-stalks many-flowered: leaves winged.*

G. Flowers in umbels; leaflets mostly on short leaf-stalks, *moschatum* unequally cut.

*Riv. pent.* 112. *G. mosch.*—*E. bot.* 902—*Jacq. hort.* i. 55—*Blackw.* 150—*Matth.* 856—*Dod.* 63. 1—*Lob. obs.* 376. 1, and *ic.* i. 658. 2—*Ger. em.* 941—*Park.* 709. 1—*Pet.* 65. 2—*H. ox.* v. 15. 10—*Ger.* 796—*Trag.* 347.

Very like the *G. cicutarium*; of an ambrosial scent. LINN. Whole plant more hairy than *G. cicutarium*; hairs glutinous, particularly those of the calyx. Flowers more numerous, forming a roundish head. Pedicles shorter. Leaves, wings fewer, egg-shaped, sometimes only serrated, or jagged, rarely with winged clefts. WOODWARD. Whole plant hairy. Stems swollen and crooked at the joints. Leaflets opposite and alternate, the terminating one 3-cleft. Fruit-stalks with from four to ten flowers, thickly set with fine white hairs, ending in pellucid globules. Calyx set with the same kind of hairs as the fruit-stalks; leaves unequal, ribbed, ending in spit-points. Petals with three fibres. Seed-coat with strong yellow hairs. Blossom red or purple. Glands five on the outside of the anther-bearing filaments; green.

*Musked Crane'sbill.* *Muscovy.* *Erodium moschatum.* Fl. Brit. Dry pastures in Westmoreland and Yorkshire.—Near Battersea; and between Bristol and St. Vincent's Rocks.—[Near Stourbridge. ST.—Hornsey, Yorkshire; and Farringdon, Somersetshire. Mr. BAKER.—At Teignmoath.]—(On Amptill warren, Bedfordshire. Rev. Dr. ABBOT. E.) A. May—Oct,

G. Flowers in umbels; leaflets sitting, wing-cleft, blunt; *cicutarium*. petals entire.

*Curt.*—*Fl. dan.* 986—*Kniph.* 11—*E. bot.* 1768—*Fuchs.* 204—*J. B.* iii. 479—*Dod.* 64. 1—*Lob. ic.* 659. 1—*Ger. em.* 945. 3—*Pet.* 65. 3—*H. ox.* v. 15. 9—*Ger.* 800, 3, and 4—*Cam. epit.* 601—*Riv. irr. pent.* *G. robertianum.*



*Petals* entire, the two upper ones with a spot at the base, as is also the case with the *G. moschatum* and the *G. pimpinellifolium* of Dill. Giss. 173. LINN. *Leaflets* more deeply cut in the summer than in the spring. *Blossom* varying much in size even on the same plant. *Petals* the two shorter ones sometimes spotted, sometimes only one of them spotted, and sometimes neither. STOKES. Plant either hairy or smooth. *Leaflets* pointed, jagged. WOODWARD.

The various appearances of this plant at different seasons and in different soils, and its resemblance in many respects to starved specimens of the *G. moschatum*, have occasioned many errors. The spots on the petals are not to be trusted, neither are the incisions of the leaflets. The musk odour of the *G. moschatum*, is the most obvious distinction. In the *G. cicutarium* the leaflets are in general more deeply and more finely cut, and shoulder up close to the mid-rib with hardly the appearance of a leaf-stalk, but in the *G. moschatum* the leaf-stalks to some of the leaflets are sufficiently obvious, and in the larger specimens the edges of the leaflets are little more than serrated. *Flowers* rose red.

*Hemlock-leaved Cranesbill.* *Erodium cicutarium*. Fl. Brit. Cornfields, road sides, ditch banks, walls, rubbish, in a sandy soil. [Near the shore at Teignmouth.] A. April—Oct.

Var. 2. *fine-leaved*. Leaflets with winged clefts, segments strap-shaped.

*G. pimpinellifolium*, RAY. WOODWARD. Bot. arr. ed. ii. *Leaves*, wings with deeper winged clefts than those of the preceding. *Little wings* nearly strap-shaped, rarely jagged. Sandy heaths and cornfields, Suffolk, frequent. Mr. WOODWARD.

Mr. Woodward thought this a distinct species, and so does Mr. Robson, but we are not yet in possession of specific differences sufficient to establish it as such. Ray refers us to Rivinus irr. pentap. icon. *G. robertianum* for a figure of his *G. pimpinellifolium*, but that figure is a representation of *G. cicutarium* in its largest and probably cultivated state.

Both in this and in the preceding there are five glands of a dark colour on the outside the base of the anther-bearing filaments.

Var. 3. *hoary*. Flowers larger. Blossom white. Stems thicker. Leaves not so finely cut. RAY. Leaves hoary, with white hairs, possibly the effect of the sea air. Mr. WOODWARD.

Near Camberwell. RAY. Sea banks near Weems, Fifeshire. LIGHTFOOT. [On Yarmouth Denes very plentifully, and elsewhere within the distance of a few miles from the sea. Mr. WOODWARD. St. Vincent's Rocks, Bristol.]\*

\* Among the numberless instances of obvious providential design and contrivance in the structure of the seeds and seed-vessels of plants, few

## POLYANDRIA.

**ALTHÆA.** *Calyx* double, outer 9-cleft: *capsules* many, 1 seed in each.

**A.** Leaves undivided, angular, cottony.

*officinalis.*

*Kniph.* 6—*Ludw.* 1—*E. bot.* 147—*Woodv.* 53—*Fl. dan.* 530—*Blackw.* 90—*Park.* 304. 1—*Fuchs.* 15—*Trag.* 371—*J. B.* ii. 954—*Lonie.* i. 157. 1—*Ger.* 787—*Matth.* 925—*Clus.* ii. 24. 1—*Dod.* 655. 1—*Lob. obs.* 373. 1, and *ic.* i. 653. 1—*Ger. em.* 933. 1—*H. or.* v. 19. 12.

*Stem* upright, a yard high or more, cottony, cylindrical, somewhat branched. *Leaves* egg-spear-shaped, woolly, very soft, velvety; the upper smaller, with generally three imperfect lobes, serrated, with mostly five ribs underneath; the lower

are, perhaps, more remarkable, or more strikingly display themselves as the workmanship of an intelligent artificer, than that which we meet with in the seeds of the *Geranium cicutarium*, *moschatum*, and some other species. The seeds of this genus surround the pistil at its base; each seed is covered with a distinct seed-coat peculiar to itself, which, after having inclosed the seed, runs out in the form of a narrow appendage or tail, to the extremity of the style, to which it is slightly connected along its whole length, and which has five grooves or flutes to receive the five seeds with their appendages. Each of these appendages has the property of contracting itself into a spiral or screw-like form, when dry; and of again extending itself into a right line, when moist. In short, it is a spiral spring, which lengthens or contracts itself alternately, as often, and in such proportion, as it happens to become wet or dry. This power first exerts itself when the seed and its appendage becomes dry, in consequence of arriving at maturity; when it gradually separates the seed from its parent plant. The seed, thus disengaged, is continually contracting and dilating itself, as the weather changes from wet to dry, and from dry to wet; and by this means is kept in motion, till it is either destroyed by the vicissitudes of the seasons, or meets with some crevice in the earth, or some light porous spot, into which it can easily insinuate itself, and from thence, in due time, produce a new plant. The particular minutiae of the mechanical structure and operations of this curious seed will be better understood by inspection, than by the most accurate and laboured description; and all its manœuvres may be seen in a short space of time, by alternately moistening and drying it; which may be readily done, by putting a little water on the edge of a white stone or china plate, and removing it by turns from the dry to the moist, and from the moist to the dry part of the plate; or the changes may still more quickly be produced, by removing it from the wet to a fresh plate, and drying it before a fire. I mention a white plate, because on that, I imagine, the fine hairs which display themselves from the sides of the tail, as that contracts, and which act as fulcra, or feet, to assist and direct the seed in its motions, are most easily distinguished. Dr. ARNOLD.

larger, with seven ribs, sometimes serrated, sometimes rather scalloped. *Flowers* from the bosom of the leaves, on fruit-stalks, in a kind of panicle. *Flower-scales* many-cleft, bristle-shaped. *Petals* nicked, flesh-coloured. *RELHAN*. *Stem* and *leaves* clothed with a thick pile, feeling exactly like velvet. All the *leaves* obscurely lobed, doubly serrated; the lower egg-shaped, somewhat heart-shaped at the base; the upper egg-spear-shaped. *Blossom* white, or pale flesh-coloured. *WOODWARD*. *Leaves* on leaf-stalks, angular. *Calyx*, the outer with sometimes eleven or twelve segments. *Petals* fringed at the base.

*Marsh Mallow Wymote*. Salt marshes and banks of rivers. [Salt marshes, Norfolk and Suffolk. *Mr. WOODWARD*.—Sea shore near Marazion and Penzance, Cornwall. *Mr. WATT*.

P. Aug.\*

- (hirsu'ta. A. Leaves 3-clefted, rough with hairs, smooth on the upper surface; peduncles solitary, one-flowered.

*Jacq. Austr. t. 170.*

*Stems* spreading, rough with expanding hairs. *Calyx*, the outer with eight segments, inner the length of the blossom, sharp-pointed. *Blossom* pinky white, scalloped. *LINN*. *Root-leaves* kidney-shaped. *HALLER*.

*Rough Althæa*. This species was first published to the British Botanist by the Rev. J. Symons in his Synopsis. It was discovered in a field near Cobham, by Mr. J. RAYER, in 1792. (P. E.)

**MALVA.** *Calyx* double, the outer mostly of 3 leaves: *capsules* 8 or more, in a whirl: 1, rarely 2-celled; 1 seed in each.

- pusil'la. M. Stem declining; leaves roundish-heart-shaped, decidedly 5-lobed; flowers on fruit-stalks, petals only the length of the calyx.

*E. bot. 241.*

\* (*Althæa* of Pharm. Lond. E.) The whole plant, particularly the root, abounds with a mild mucilage. The root boiled is much used as an emollient cataplasm, and an infusion of it is very generally prescribed in all cases wherein mild mucilaginous substances are useful.

Dr. Smith observes that it is chiefly distinguishable from the *M. rotundifolia* in the petals scarcely exceeding the calyx, and the fruit-stalks being only two in the bosom of each leaf-stalk; (that learned author has consequently reduced this plant to a variety of *M. rotundifolia*, in which proceeding we cannot, however, immediately follow him; as on examination of various specimens both foreign and British we find the general habits of the two plants obviously different; this species exhibiting more stem, with a nearly upright growth; flowers remarkably diminutive; leaves, both young and old, decidedly five lobed; besides which *M. pusilla* is biennial on the uncontradicted testimony of Hudson, and a much less frequent plant. E.)

*Small-flowered Mallow.* *M. parviflora*. HUDS. *M. rotundifolia* β. Fl. Brit. Said to have been found by him, as heretofore, by Mr. Sherard and Mr. Rand at Hythe in Kent.

[My specimens gathered in Pembrokeshire.] B. July.

*M.* Stem short, prostrate; leaves heart-shaped, circular, rotundifolia. plaited, indistinctly 5 or 7-lobed; fruit-stalks when ripe declining.

*Curt.* 157—*Fl. dan.* 721—*E. bot.* 1092—*Fuchs.* 508—*J. B.* ii. 549. 2—*Trag.* 369—*Dod.* 653. 2—*Lob. obs.* 371. 2, and *ic.* i. 651. 1—*Ger. em.* 930. 2—*Lonic.* i. 156. 2.

*Blossom* white, with a tinge of purple, but sometimes, as in the neighbourhood of Upsal, quite white and smaller. LINN. *Stem* and *branches* lying close to the ground. *Leaves* serrated. *Leaf-stalks* very long. *Leaf-scales* in pairs, spear-shaped, fringed. *Fruit-stalks* much shorter than the leaves, with one flower. *Blossom* white, with purple veins. Mr. WOODWARD. *Leaf-stalks* twice or more times longer than the leaves. ST. When the larger leaves are laid quite flat, hardly any interval remains between the two edges at the base, so that they then appear quite circular. *Flowers* several together, on fruit-stalks of very different lengths. *Calyx*, outer scales spear-shaped, nearly as long as the inner cup. *Blossom* purplish rose red, sometimes paler, full twice as long as the calyx. (This plant is generally allowed to be a common annual; it is likewise distinguishable from the preceding species by its more humble growth, being frequently almost destitute of stem; by its large and pale coloured flowers; and by its leaves being heart-circular, with scarcely any perceptible lobes. E.)

*Mauls. Dwarf Mallow.* Road sides, among rubbish. [On St. Vincents's Rocks. Mr. SWAYNE.] A. June—Oct.



sylves'tris. M. Stem rough; leaves 5 or 7 lobed, toothed; outer calyx leaflets partly united at the base.

*Curt.-E. bot.* 671-*Blackw.* 22-*Woodv.* 54-*Fuchs.* 509-*J. B.* 949. 1-*Ger.* 785. 1-*H. ox. v.* 17. 8-*Dod.* 653. 1-*Lob. obs.* 371. 1, and *ic. i.* 650. 2-*Ger. em.* 930. 1.

*Stem* more or less upright, rough, hairy, nearly of the same thickness throughout, rather woody. *Leaves* with five lobes, rarely six or seven, unequally serrated, hairy on both sides, with a dark purple stain near the insertion of the leaf-stalk. *Leaf-stalks* three-cornered, rough. *Fruit-stalks* nearly cylindrical, from the bosom of the leaf-stalks or branches. *Calyx* outer, leaves spear-shaped; both *inner* and *outer* hairy without, smooth within, toothed at the edges, and the teeth terminating in long hairs. *Petals* deeply nicked, but not bitten, purple, with three or four darker streaks. *Summits* eleven or twelve. The colour of the *flowers* varies with more or less of a bluish cast, and the leaves are liable to be variegated with yellow white blotches.

*Common Mallow.* Hedges, foot paths, and amongst rubbish. [Though so common in most parts of England, it is so scarce about Kendal in Westmoreland, that to find a plant of it is regarded as a botanical discovery. Dr. STOKES. Its trivial name ill accords with its usual places of growth in this country, for I do not recollect ever having found it in a wood.]

A. Juné—Aug.\*

moscha'ta. M. Stem upright; root-leaves kidney-shaped, cut, stem-leaves with 5 divisions; segments between winged and many-cloven; leaflets of the outer cup distinct.

*Curt.* 228-*E. bot.* 754-*Fl. dan.* 905-*Col. ecphr.* 147-*Walc.* -*J. B.* ii. 1067. 1-*H. ox. v.* 18. 4.

Differs from *M. Alcea* as follows:—*Stem* not so tall, with solitary upright hairs rising from a prominent little point. *Seed-coats* rough with hairs. *Flowers* of an ambrosial scent. LINN. In the *M. Alcea* the calyx has a protuberating ring at the

\* (Professor Davy observes that the fibres of all kinds of Mallows are particularly beautiful, especially of this species. They are finer than camel's hair and there is no difficulty in procuring them. *Month. Mag.* v. 28. E.)

base, and the outer cup is formed of three egg-shaped leaflets, but the *M. moschata* has no such ring at the base of the calyx, and the leaflets are spear-shaped. CURTIS. The *M. moschata* may also be distinguished by its musk-like smell, but this is not always perceptible, and there is reason to believe that in this case it has been mistaken for the *M. Alcea*, a plant which I believe is not one of our natives. *Flowers* flesh-coloured. *Styles* fourteen to eighteen.

*Musk Mallow*. Meadows, pastures, road sides, and ditch banks. [Hertfordshire, Huntingdonshire, Derbyshire, and the North, frequent. In Norfolk and Suffolk sparingly. Mr. WOODWARD. Very common in the midland counties.]

P. July—Aug.

(A variety with white blossoms has been observed by Mr. DILLWYN in fields near Eyethorn, in Kent. *Bot Guide*. E.)

**LAVATE'RA.** *Cal.* double, the *outer* 3-cleft: *capsules* many, equal in number to the *summits*; placed in a circle, 1 seed in each.

L. Stem woody; leaves with 7 angles, cottony, plaited; arbo'rea. fruit-stalks crowded, axillary, 1 flower on each.

*E. bot.* 1841.—Gærtn. 136. 2, *Calyx and fruit*—Besl. *Eyst' æstiv.* vi. 6. 1, on the authority of Gærtner. and Cavan-ill. diss. v. 139. 2, on that of Gmelin.

*Stem* in the smaller plants like that of a cabbage, but taller; in the larger plants from four to six feet high, and as much as four inches in diameter. *Leaves* with seven, five or three angles; as soft as the finest velvet. *Flowers* mostly in pairs. *Calyx*, *outer* much larger than the inner; the segments broad, blunt, sometimes notched. *Blossom* purplish red, with dark blotches at the base of the petals. The cylinder of united filaments woolly at the base.

*Sea Tree-Mallow*, or *Velvet-leaf*. Sea shores. Hurst Castle, opposite to the Isle of Wight. Portland Island; rocks of Caldey Island; and Bass Islands, near Edinburgh, (and at Hurst Castle, over against the Isle of Wight. Godrevy Island near Portreath; Mullion-gull rock in St. Ives' Bay, &c. BORLASE. RAY.—Inch Garvey and Mykrie-Inch, in the Firth of

Forth. SIBBALD. Cornwall and Devonshire. HUDSON. [Chisel in Portland Island. Mr. WARING. At Teignmouth.]

B. July—Oct.

**TAXUS.** Male and female flowers on different plants: *bloss.* none: *calyx* a 4 or 7-leaved bud.

Male. *Anthers* target-shaped 8-cleft.

Fem. *Style* none: *seed* 1, surrounded at the base by a pulpy receptacle; the upper half naked.

*bacca'ta.*

T. Leaves solitary, strap-shaped, prickly-pointed, near together; receptacle of the male flowers somewhat globular.

*E. bot.* 746—*Hunt. Evel.* p. 378; i. p. 275. ed. II.—*Blackw.* 572—*Kniph.* 1—*Cam. epit.* 840—*Tourn.* 362. 1—*J. B. i. b.* 241. 2—*Dod.* 859. 1—*Lob. obs.* 637. 1, and *ic. ii.* 232—*Ger. em.* 1370—*Ger.* 1187. 2—*Park.* 1412—*Gars.* 580—*Matth.* 1099.

(*Bark* peeling off. *Branches* horizontal. *Leaves* very entire, blackish-green, smooth, shining, ever-green. *Blossoms* axillary, scattered, sessile, solitary; *floral-leaves* tiled, membranaceous. *Fl. Brit. E.*) *Berries* very singular, proceeding from a receptacle which half covers and protects the seed, coming to perfection in the second year. *Seed* with two seed-lobes. LINN. *Bark* reddish. (*Berries* when ripe of a beautiful red colour. E.)

*Yew Tree.* Mountainous woods and hedges. *R. Syn.* Mountains of Westmoreland, Cumberland, and hills of Herefordshire. HUDS.—In a truly wild state out of the clefts of the rocks on Giggleswick Scar, where several grow out of the fissures, and spreading on each side, clothe the rock to some distance. [In inaccessible situations, on the rocks of Borrowdale, and on Conzic Scar, near Kendal. There can be little doubt but these are its truly natural stations. WOODWARD.—On the mountain called Yew-barrow, clearly in its indigenous state, and in several other inaccessible places on the mountains of Furness Fells. Mr. ATKINSON.—In Castle Eden Dean, Durham, undoubtedly wild. Mr. ROBSON.] (Woods about Egleston. Rev. J. HARRIMAN. Shores of the Wear

below Hilton Castle; woods above Derwent Bridge, &c. Durham. Mr. WINCH. *Bot. Guide. E.*) T. March—April.\*

**PINUS.** Male and Fem. flowers on the same plant: *bloss.* none.

Male. *Calyx* scales forming a bud standing open: *anthers* naked.

Fem. *Calyx* scales forming a cone, 2 flowers in each scale: *pistil* 1: *nut* of 1 cell, without valves, bordered with a membrane.

E. Leaves in pairs, rigid; cones egg-conical, mostly in *sylves'tris*. pairs, as long as the leaves; scales oblong, blunt.

*Lambert. Pin. t. 1-Fl. Ross. II. f. I. i.-Mill. ill.-Blackw. 190-Hunt. Evel. 266; i. p. 274. ed. II.-Woodv. 207-Barr. 729-Tourn. 355, 356, P. Q.-Matth. 98-Ger. 1175. 2-J. B. i. b. 253-Dod. 860. 1-Lob. obs. 631. 2, and ic. ii. 226. 2-Ger. em. 1356. 1.*

(Male and female flowers sometimes observable upon different trees. OELHAVEN. E.) Cones whitish, pendent. (A tall, straight tree, sending forth horizontal branches, and maintaining constantly a dismal dark glaucous-green foliage. *Stem* red-

\* This tree grows best in a moist loamy soil. On bogs or dry mountains it languishes. It bears transplanting even when old. It is often planted to make hedges, and as these hedges admit of clipping, they form excellent screens to keep off the cold winds from tender plants.—The wood is hard, smooth, and beautifully veined with red. It is converted into bows, axle-trees, spoons, cups, cogs for mill-wheels and flood-gates for fish-ponds, which hardly ever decay.—The berries are sweet and viscid. Children often eat them in large quantities without any inconvenience.—Swine and Fieldfares are fond of them. The fresh leaves are fatal to the human species. Three children were killed by a spoonful of the green leaves. They died without agony, or any of the usual symptoms of vegetable poisons. The same quantity of the dried leaves had been given the day before without any effect. *Percival's Essays*, iii.—Sheep and goats eat it, horses and cows refused it. LINN.—but there are instances of both having been killed by eating it, branches having been found in their stomachs. *Gent. Mag.* lvi. 941. and sheep are said to have been killed by browsing upon the bark. I suspect that the toppings, or a half dried state are most detrimental to cattle.—Several mountainous places are named in the *Gent. Mag.* 1793, p. 101, in which it doubtless grows wild. Those trees situated in the accessible parts of the mountains are generally cut down and brought to market for chairs and steps of ladders, for which use their durability renders them valuable.



dish. *Leaves* very straight, and slender, strap-shaped, rigid, smooth, channeled on the upper surface, convex underneath\* E.)

*Scotch Fir.* Highland mountains, both scattered, and in natural forests of many miles extent. LIGHTFOOT.

T. May.\*

\* It flourishes best in a poor sandy soil. (Mr. Lambert informs us that in Ireland much of the old roots of this tree is found in the bogs, and from them are manufactured ropes capable of resisting weather longer than those made from hemp. E.) In a grove, the trunk becomes tall and naked; in sunny open places, branched. On rocks or bogs, it seldom attains a large size. In black soil it becomes diseased, and in chalky land it dies. Sometimes it will thrive near running, but never near stagnant waters. None but the terminating buds send forth branches, therefore it will not bear the least clipping. The roots spread very near to the surface of the earth, all but the central root, which grows directly downwards; and if this is broken off, or interrupted in its passage by rocks, the stem ceases to shoot upwards, and the tree for ever remains a dwarf. Upon this account it is apt to suffer by transplanting.—This tree furnishes us with the best red or yellow deal. It is smooth, light, and easily cloven. The bark will tan leather.—The inhabitants of the North of Europe make bread from this tree in the following manner:—They choose a tree whose trunk is even, for these contain the least resin, and strip off the bark in the spring when it separates most readily. This they first dry gently in the shade; then in a greater heat; and reduce it to powder. With this powder they mix a small quantity of corn-meal, and with water knead it into bread. This they eat, not only in years of scarcity, but at other times, from an apprehension that long disuse might render it disagreeable to them. Their children are very fond of the fresh bark in the spring time, either shaved with a knife or grated with a rasp—the young shoots distilled afford a fragrant essential oil.—Sheep and goats are not fond of it; horses refuse it.—It affords nourishment to the *Phalana Pini*, *quadra*; *Curculio Pini*, and *Cumex Abietis*.

CLASS XVII.

DIADELPHIA.

HEXANDRIA.

FUMARIA. *Cal.* 2 leaves: *Bloss.* gaping, bulging, at the base and containing honey: *Filaments* with 3 anthers.

OCTANDRIA.

POLYGALA. *Cal.* with 2 segments like wings: *Bloss.* standard cylindrical: *Stamens* connected: *Caps.* inversely heart-shaped, 2-celled.

DECANDRIA.

(1) *Stamens all united.*

SPARTIUM. *Filaments* adhering to the germen: *Summit* hairy, growing to the upper side of the style.

GENISTA. *Pistil* pressing down the keel: *Summit* rolled inwards.

ANTHYLLIS. *Cup* swollen and turgid; inclosing the legumen.

ULEX. *Cup* 2 leaves: *Legumen* hardly longer than the cup.

ONONIS. *Legumen* diamond-shaped, sitting: *Standard* scored.

(2) *Summit downy: Filaments 9 united, 1 distinct.*

OROBUS. *Style* slender, nearly cylindrical; woolly on the upper or inner side.

PSUM. *Style* keeled, woolly above.

LA'THYRUS. *Style* flat, and woolly above.

VICIA. *Style* bearded under the *Summit*.

## DAIDELPHIA.

(3) *Legumen 2-celled.*ASTRA'GALUS. *Legumen 2-celled, curved.*(4) *Legumen with about 1 seed.*'TRIFO'LIUM. *Legumen longer than the cup; with 1 or 2 seeds: flowers (mostly) in heads.*[*Medicago lupulina. Hedysarum Onobrychis.*](5) *Legumens almost jointed; sometimes spiral. St.*HEDYS'ARUM. *Legumen with roundish compressed joints: Keel very blunt.*ORNI'THOPUS *Legumen jointed; bent like a bow.*HIPPOCRE'PIS. *Legumen compressed; membranaceous; 1 of the seams hollowed out with very deep notches.*MEDICA'GO. *Legumen spiral; membranaceous: compressed; Pistil pressing down the keel.*(6) *Legumen of 1 cell; with 2 or more seeds: (without the marks of the former subdivisions.)*ER'VUM. *Cup with 5 divisions, nearly equal; and nearly as long as the blossom: (Stigma capitate, hairy on all sides. E. bot. E.)*LO'TUS. *Legumen cylindrical; filled with cylindrical seeds.*

Linnaeus also gives us the following natural arrangement of the different genera.

WINGED WITHOUT AN ODD LEAFIT. *Orobus, Pisum, Lathyrus, Vicia, Ervum.*

WINGED WITH AN ODD LEAFIT. *Astragalus, Hedysarum.*

WITH THREE LEAFITS. *Trifolium, Lotus, Medicago, Genista, Ononis.*

FLOWERS IN UMBELS. *Lotus, Ornithopus, Hippocrepis.*

HEXANDRIA.

**FUMA'RIA.** *Calyx* 2-leaved : *bloss.* gaping : *filaments* 2, membranaceous, each supporting 3 anthers : *caps.* 1-celled ; many seeded.

**F.** Root bulbous, solid : stem simple : floral-leaves hand-so'vida, shaped, as long as the blossom.

*E. bot.* 1471.—*Curt. Mag. t.* 231.

PLATE XXIX.

(*Stem* solitary, a span high, upright, a little zig-zag, leafy, smooth, bearing a lanceolate sheath at the bottom. *Leaves* two or three, alternate, on stalks, smooth, twice ternate, cut. *Spike* solitary, terminal, simple. *Spur* cylindrical, bluntish. *E. bot. E.*) *Flowers* purplish red, and yellow, forming a loose spike. *Floral-leaves* divided into finger-like segments. *Seed Vessel* oblong egg-shaped, opening at the bottom, four or six seeds in each.

*Solid Bulbous Fumitory.* (*F. solida.* LINN. Fl. Brit. E. bot. CURT. *F. bulbosa*  $\beta$  and  $\gamma$ . LINN. *F. intermedia.* WITH. ed. 3 and 4. HULL. E.) This plant was first sent to me by Mr. Hall, secondly by Mr. Gough, and afterwards by Mr. Robson. The former found it in Levans Park, five miles from Kendal. Wattsfield, half a mile from Kendal, amongst a clump of tall trees, plentiful. Mr. GOUGH. Near Ulverstone ; also between Cartmel and Kendal. Mr. ROBSON. At Perry Hall, near Birmingham, in a meadow between the House and the River. Mr. PITT. At Blithfield, Staffordshire. Hon. Mr. BAGOT. In a wood at Wickham, near Fareham, Hants. Mr. GARNIER. P. March—April,

(*F. Legumens* roundish, shorter than the peduncle, stems lu'tea, angular, with very small bractæ. E.)

*E. bot.* 588—*Kniph.* 11.

*Segments* of the leaves ending in a little point. *Fruit-stalks* about half the length of the flower ; *Floral-leaf* strap-spear-shaped, about one third the length of the fruit-stalk. *Blossom* yellow. (*Stems* scarcely a foot high, upright, smooth, reddish, leafy. *Spur* very short, rounded at the end. It differs from *F. capnoides* of Linnæus in being perennial, the blossoms of a deeper colour, the spur rounded at the end, not awl-shaped ;



the pod only half the length, nearly cylindrical, not three sided. *Fl. Brit. E.*)

*Yellow Fumitory. F. capnoides.* WITH. Ed. 3. First found in England by Mr. Howard, growing on old walls near Castle-ton in Derbyshire. [Holmhead near Giggleswick, Yorkshire, growing wild in great abundance. Mr. GOUGH.—Fountain's Abbey. Mr. ROBSON.]—(On old walls near Marple, four miles from Stockport. Mr. HOLME, *Bot. Guide.* P. E.)

*officina'lis.*

F Seed-vessels in bunches, 1 seed in each; stem spreading.

*Ludw.* 83—*Curt.* 112—*E. bot.* 589—*Matth.* 1158—*Riv. tetr.* 1—*Kniph.* 1—*Woodv.* 88—*Fl. dan.* 940—*Fuchs.* 338—*J. B.* iii. a. 201—*Blackw.* 237—*Walc.—Ger.* 927. 1—*Lonic.* i. 166. 2—*Dod.* 59—*Lob. obs.* 437. 3, and *ic* i. 757. 1—*Ger.* 1088. 1—*Park.* 287. 1—*Trag.* 110—*Mill.* 136. 2—*H. ox.* iii. 12. 9.

*Pouch* roundish, falling off. LINN. *Stem* smooth. *Leaves* smooth, somewhat fleshy, sea-green, trebly compound, the last divisions with three or five clefts, the extreme segments spear-shaped. *Flowers* alternate, in long spikes. *Fruit-stalks* very short. *Floral-leaves* spear-shaped, membranaceous, one at the base of each fruit-stalk. *Seed-vessel* roundish, smooth. Mr. WOODWARD. *Calyx* leaves coloured. *Blossom* upper lip keeled at the back, reflected at the edges towards the end. *Nectary* distended, shorter than the fruit-stalk, inclosing a greenish tongue-shaped substance, purple at the edge. *Wing* each with three keel-shaped ridges near the extremity on the outer side. *Style* three or four times as long as the germen. *Flowers* pink and dark purple, in long terminating spike-like bunches; sometimes very pale, or nearly white.

*Common Fumitory.* Cornfields. Hedge banks. Gardens. A. May—Aug.\*

(*parviflora*. F. Spikes diffuse; pods 1-seeded, globose, pointed at the end; stem spreading; segments of the leaves strap-shaped; channeled.

\* Cows and sheep eat it. Goats are not fond of it. Horses and swine refuse it. LINN. A horse eat it. ST. The leaves are succulent, saline and bitter. The expressed juice in doses of 2 or 3 ounces, is useful in hypochondriacal, scorbutic, and cachectic habits. It corrects acidity, and strengthens the tone of the stomach. Hoffman prefers it to all other medicines as a sweetener of the blood. There is no doubt of its utility in obstructions of the viscera, and the diseases arising therefrom. An infusion of the leaves is used as a cosmetic to remove freckles and clear the skin. Mr. WOODWARD.

*E. bot.* 590—*Vaill. Par. t.* 10. *f.* 5.

Exhibits the general habit of *F. officinalis*, but differs in the very narrow segments of the leaves, which are linear, grooved, convex beneath, never widening, or becoming wedge-shaped; and the blossom being only half the size, and paler. *Pod* acuminate, but not notched at the end.

*Small-flowered Fumitory.* Cornfields about Woldham, near Rochester. Mr. JACOB RAYER—Near Epsom. Mr. T. F. FORSTER, jun. *Fl. Brit.* A. Aug.—Sept. E.)

F. Seed-vessels in bunches, one seed in each; leaves climbing, sparingly furnished with tendrils. capreola'ta.

*Dicks. h. s.—Curt.—E. bot.* 943.

PLATE XXX.

*Pedicles* bowed back. The extreme *leaflets* running into tendrils. LINN. *Stems* longer and weaker than those of *F. officinalis*. *Leaves* more distant, not so finely divided, the extreme divisions broader and blunter. *Flowers* fewer on the spike. *Fruit-stalks* longer. Mr. WOODWARD. *Stem* sometimes trailing, and interweaving its branches among the grass, very much branched, sometimes three feet long. *Blossom* pale red. ST. Clearly distinct from the *F. officinalis*, as I have proved by sowing the seed. The *leaves* frequently running into tendrils. Mr. ROBSON. *Seed-vessels* globular. (We would willingly correct our representation of this plant, but on again comparing it with specimens are not aware of the small error noticed in *E. bot.* 943. E.)

*Ramping Fumitory.* Gardens, cultivated ground, and under walls with the *F. officinalis*. RAY.—Rocks by the sea side. LIGHTFOOT.—Ditch banks. ST.—(Frequent about Liverpool. Dr. BOSTOCK.—Abundant in Cornwall and Devon. E.)

A. Aug—Oct.

F. Legumens strap-shaped; leaves with tendrils. clavícula'ta.

*Fl. dan.* 340—*E. bot.* 103—*Dod.* 60—*Lob. obs.* 438. 2, and *ic.* i. 758. 1—*Ger. em.* 1088. 2—*J. B.* iii. a. 204. 1—*Park.* 288. 6—*H. ox.* iii. 12. 3—*Ger.* 929. 5 and 6.

*Tendrils* from the ends of the leaves. LINN. *Leaf-stalks* often crooked. *Tendrils* generally forked, and sometimes with two minute leaves near the end. *Spikes* lateral. *Fruit-stalks* straight, naked. *Legumens* with two seeds. Mr. WOOD. *Flowers* few, yellow. *Spikes* short. Mr. WOODWARD. *Stems* 3-cornered, slender, purplish at the base. *Leaflets* egg-spear-shaped, ending in a sharp flexible point. *Spikes* towards the top of the stem or

branches, of about five flowers, seldom more than two of which come to perfection. *Calyx-leaves* inversely heart-shaped, white, very small. *Blossom standard* oblong, concave, reflected at the end, not notched. *Nectary* blunt. *Keel* a little concave at the top, and reflected at the edges. *Filaments*, one fixed to the standard, the other to the base of the two wings and uniting them. *Germen* heart-shaped. *Style* crooked. *Summit* flat, and ragged. *Seed-vessel* oblong, tapering, with one to three seeds. The shape of the *seed-vessel* at once distinguishes this from the two preceding species. The colour of the *flowers* varies from greenish to a yellowish white, and sometimes they have a purple tinge.

*White Climbing Fumitory.* Woods and moist hedges, boggy and rocky places, in a sandy soil, and on the banks of lakes and rivers. Among the rocks of Stonehall, near Rawdon, seven miles from Leeds. Mr. WOOD.—Rough stony places above Great Malvern Tower. NASH. Mr. BALLARD.—Thorpe, near Norwich. WOODWARD.—In a marsh on the East side of Kendal Castle. Mr. GOUGH.—Thatched houses in many parts of the islands of Scotland quite covered with it. Mr. BROWN.—Among loose stones on the N. E. side of the Wrekin. Mr. AIKIN.—Dry stony places in Furness Fells. Mr. ATKINSON.—(Knot's Hole, near Liverpool. Dr. BOSTOCK.—Abundant in hedges by the road side near Llangollen from Chirk. E.)—On Malvern hill, above the spring. In some of the least frequented lanes about Birmingham. A. June—Sept.

## OCTANDRIA.

**POLYG'ALA.** *Calyx* 5-leaved, 2 larger wing-like, before the ripening of the seeds, coloured: *caps.* inversely heart-shaped, 2-celled: seeds solitary.

vulga'ris.

P. Flowers in bunches; stems herbaceous, simple, trailing; leaves strap-spear-shaped.

Walc.—*Fl. dan.* 516—*Kniph.* 11—*E. bot.* 76—*J. B.* iii. 386. 3 and 4—*Dod.* 253—*Lob. obs.* 228. 1. and *ic.* i. 416. 2—*Ger. em.* 564—*Park.* 1332. 2—*Trag.* 571—*Ionic.* i. 183. 1—*J. B.* iii. 362—*Lob. ic.* i. 417. 1—*Ger. em.* 563. 3—*Ger.* 449. 4.

*Stem* with us never nearly upright. *Flowers* with a pencil-shaped appendage. LINN. *Stem* 4-cornered, undivided. *Leaves*

alternate or in pairs, a little rolled back at the edges, the upper spear-shaped, the lower egg-shaped. *Calyx-leaves* spear-shaped, concave, coloured. *Blossom wings* spear-shaped, more fully coloured than the calyx; *standard* composed of two petals, joined by a hairyness at the edges. *Keel* cylindrical below, but towards the top expanding into two sets of club-shaped glandular appendages. *Filaments* in two sets, like two expanding hands, with four fingers to each. *Anthers* yellow, or orange. *Style* thicker upwards. *Summit* with two lips the one a fleshy knob, the other spear-shaped, concave. *Seed-vessel* bordered. *Bunches* terminating. *Blossom* blue, or purple, or flesh-coloured, or white. It sometimes grows quite upright in this country.

*Common Milkwort.* Pastures and heaths, common.

P. June—July.\*

## DECANDRIA.

**SPARTIUM.** *Cal.* extending downwards; 2-lipped: *filaments* adhering to the germen: *summit* woolly above.

S. Leaves in threes, and solitary; branches without prickles, *scopa'rium*. angular.

*Curt.-E. bot.* 1339—*Kniph.* 3—*Riv. tetr.* 63. 1, *Genista.*—*Woodv.* 89—*Fl. dan.* 313—*Blackw.* 244—*Sheldr.* 7—*Dod.* 761. 1—*Lob. obs.* 531. 1, and *ic.* ii. 89. 1—*Ger. em.* 1311. 1—*Park.* 229. 1—*Ger.* 1130. 1—*Fuchs.* 219—*J. B.* i. b. 388. 3—*Trag.* 961—*Lonic.* i. 39. 2.

*Calyx* the lip beneath the keel with three, the other with two very short teeth. **RELHAN.** *Legumen* fringed at the edge with long soft hairs. **WOODWARD.** *Leaves* and *leaf-stalks* slightly hairy. *Calyx* the upper segment with two teeth larger than those of the lower. *Blossom standard* nearly circular, slightly notched at the end. *Keel*, the petals rather hooked, united at the lower edge by an intertexture of very fine, soft, woolly hairs. *Stamens*, four long and six short. *Style* bowed almost into a circle, and after flowering into a spiral; the very end, which

\* Linnæus found it to possess the properties of the Senega Rattle-snake root, (*Polygala Senega*) but in an inferior degree. Dubamel used it in pleuretic cases with the desired success. *Mem. de Paris*, 1740. The powdered root may be given in doses of half a dram. Cows, goats, and sheep eat it, swine refuse it. An infusion of the herb, which is very bitter, taken in the morning fasting, about a quarter of a pint daily, promotes expectoration, and is good for a catarrhus cough. I tried it with success. **DR. SMITH.**



one should be inclined to regard as the summit, not hairy. Blossom yellow. (*Branches* numerous, evergreen. E.)

*Common Broom.* Dry pastures. S. May—June.\*

**GENIS'TA.** *Calyx* 2-lipped, the upper 2, the lower 3-toothed: *standard* oblong, bent back from the stamens and pistil: legumen regular-shaped.

tincto'ria. G. Branches scored, cylindrical, upright; leaves spear-shaped, smooth; legumen cylindrical.

*Dicks. h. s.—Fl. dan.* 526—*E. bot.* 44—*Kniph.* 6—*Fuchs.* 808—*Trag.* 604—*Dod.* 763. 1—*J. B. i. b.* 391—*Ger.* 1134. 1—*Clus. i.* 101. 2—*Lob. obs.* 521. 2, and *ic. ii.* 90. 2—*Ger. em.* 1316. 1—*Park.* 229. 7.

*Flowers* in leafy spikes. *Flower-leaves* shorter than the blossoms. *Calyx* with five nearly equal clefts. *Blossom* standard egg-shaped, blunt; *Wings* oblong-oval; *keel* compressed. *Summit* a little knob. *Blossom* yellow. It is justly observed in E. bot. that in this species the seeds are numerous, and not

\* The young flowers are sometimes preserved as pickles. The plant when burnt, affords a tolerably pure alkaline salt. Dr. Mead relates the case of a dropsical patient that was cured by taking half a pint of a decoction of green Broom tops, with a spoonful of whole Mustard seed, every morning and evening. The patient had been tapped three times, and tried the usual remedies before. (*Monita et præcept. medica. p.* 138.) An infusion of the seeds drank freely, has been known to produce similar happy effects; but, whoever expects these effects to follow in every dropsical case will be greatly deceived. I knew them succeed in one case that was truly deplorable; but out of a great number of cases, in which the medicine had a fair trial, this proved a single instance. A strong lixivium of the ashes was used in the Swedish army, in the year 1759, to cure dropsies consequential to a catarrhal epidemic fever. The urine became plentiful, and the dropsies soon disappeared. *Med. Comm. vol. i. p.* 373. Some use the seeds roasted, so as to make a kind of coffee. The plant, when growing large, merits a place among our flowering shrubs, on account of the profusion of its golden coloured blossoms. Cows, horses, and sheep refuse it. LINN. (Notwithstanding the assertion of Linnæus that sheep do not eat Broom, it is customary in some parts of Britain to pasture the flocks where it abounds in blossom, and thus, in the opinion of many intelligent farmers, is the disease called the Rot prevented. E.) The *Phalæna Pisi* feeds upon it. When the seeds are fully ripe and the legumen becomes black, it has the power of discharging its contents to a considerable distance around by a peculiar elastic movement. (The Rev. James Hall has reported a method of procuring flax from Broom. The process is detailed in *Month. Mag. v.* 23. p. 616. This discovery may prove important to the paper manufacturers. This kind of flax has also been bleached and spun with good success. The remaining twigs are well calculated for carpet brooms. E.)

solitary as stated in Gen. Pl. (*Leaves* alternate, sessile, undivided, spear-shaped, smooth, sometimes having a few hairs at the edge and underneath. *Fl. Brit. E.*)

*Dyers' Green-weed.* *Wood Waxen.* Pastures and borders of cornfields. S. July—Aug.\*

G. Leaves egg-spear-shaped, blunt, (hairy beneath. E.) pilo'sa. stem with tubercles, prostrate, (without prickles. E.)

*Jacq. austr.* 208—*E. bot.* 208—*Kniph.* 5—*Rose* 3. 1—*Clus. i.* 103. 2—*Ger. em.* 1313. 6—*Ger.* 1132. 6—*J. B. i.* 393. 2.

*Legumen* with many or only two seeds. REICH. *Stem* and *branches* tough, lying close to the ground, even beneath the moss. *Stem* much branched; the old branches naked, the young ones clothed with leaves. *Leaves* numerous, minute, oval, or oval-spear-shaped, entire, smooth above, with white silky hairs underneath. *Flowering-branches* ascending. *Flowers* in short spikes at the ends of the branches. *Fruit-stalks* short, hairy. *Calyx* hairy, yellowish green; lips nearly equal, pointed. *Blossom* yellow, hairy without, excepting the wings. *Legumen* hairy. Mr. WOODWARD.

*Hairy Green-weed.* Pastures, heaths, dry and hilly places. About Lackford, four or five miles from St. Edmund's Bury, (and on Soap Rocks, near the Lizard point. E.) Sir J. CULLUM. Heaths near Bury, which are perfectly yellow with it when in flower, but after flowering it is with difficulty found, the stems lying, so close to the ground. Mr. WOODWARD.—Between Dolgelly and Llyn-Arran, at the foot of Cader Idris, about half a mile from the pool. Mr. GRIFFITH.—(On the very West point of St. David's Head, Pembrokeshire, in considerable quantity. Mr. MILNE, *Bot. Guide.* E.) S. May—June.

G. Very thorny, smooth; thorns simple and compound; an'glica. leaves egg-spear-shaped; (the flowering branches destitute of thorns. E.)

*Dicks. h. s.—E. bot.* 132—*Fl. dan.* 619—*Dod.* 760—*Lob. obs.* 535. 2, and *ic ii.* 93. 2—*Ger. em.* 1320. 4—*Park.* 1004. 4—*Ger.* 1140. 5—*Lonic. i.* 39. 1.

The *old branches* thorny, the *flowering branches* without thorns, or with scattered thorns. RELHAN. *Stem* much branched.

\* A yellow colour may be prepared from the flowers, and for wool that is to be dyed green, the dyers prefer it to all others. A dram and a half of the powdered seeds, operates as a mild purgative. A decoction of the plant is sometimes diuretic, and therefore has proved serviceable in dropsical cases. Horses, cows, goats, and sheep eat it.

The *old branches* tough, without leaves, beset with thorns; *thorns* very sharp, slender, a quarter to half an inch long; the shoots of the year in bundles at the end of the old ones, but sparingly from the sides, with numerous leaves intermixed with soft thorns. *Leaves* sometimes oval, smooth, entire, small, bright green. *Flowers* pale yellow, small, few. *Legumens* short, broad, smooth, with three or four seeds. WOODWARD. *Calyx* yellow. *Summit* a small knob. *Seed-vessel* with from three to fourteen seeds.

*Needle Furze. Petty Whin. Needle Green-weed.* Heaths, and moist spongy ground. Bungay Common, Suffolk. WOODWARD.—Heaths, west of Bishop's Aukland. Mr. ROBSON.—New Forest, near Stony Cross. Broadmoor, near Birmingham.

S. May—June.

**ULEX.** *Calyx* 2-leaved: *legumen* scarcely longer than the calyx.

Europæus. **U.** *Calyx* shorter than the blossom, with two spear-shaped deciduous scales at the base; (smaller branches upright. Fl. Brit. E.)

*E. bot.* 742—*Fl. dan.* 608—*Clus.* i. 106. 2—*Dod.* 759. 1—*Ger. em.* 1319. 1—*Park.* 1004. 1—*J. B.* i. b. 400. 2.

*Stems* and branches (very numerous. *Teeth* of the calyx approaching. E.) deeply furrowed, (hairy, and extremely thorny. *Spines* angular, extremely pungent, smooth. *Leaves* springing from the base of the spines, solitary, awl-shaped, roughish. E.) *Leaves* deciduous. *Calyx* sometimes very woolly, but not equally so in all plants. *Blossom* yellow, (half as long again as the calyx, and, as Dr. Smith remarks, emitting a smell like to that of honey. E.) Besides the pair of scales at the top of the fruit-stalk close to the calyx, there is a single scale at its base, on the outer side.

*French Furze. Whin, or Gorze. Common Furze.* Heaths, road sides, and pastures, but does not flourish in very poor soil. Extremely luxuriant in Cornwall, growing to the height of six or eight feet.

P. Feb.—Aug.\*

\* *Gorze* is in some respects a very hardy plant, and will make fences upon the bleaker mountains, and close to the sea side, where the spray of the sea kills almost every other shrub; but it is impatient of cold, is often destroyed by severe frost, and is rarely found in the northern parts of our island. In Cornwall, where fuel is scarce, it is cultivated to advantage, and is generally cut to make faggots for heating ovens, which it does very soon, burning rapidly, and with a great degree of heat. The ashes are used

U. Calyx about as long as the blossom, with two dark coloured spots at the base; (smaller branches decumbent. Fl. Brit. E.) na'nus.

*E. bot.* 743.

(A plant of more humble growth, with shorter spines, and smaller flowers than the preceding. *Calyx* silky, less woolly, with teeth deeply cut and standing apart. *Blossom* but little longer than the calyx, and of a less bright colour than the former. *Fl. Brit. E.*) *Stems* and *branches* less deeply furrowed than in the preceding, and the leaves more permanent; but the best characteristic is that pointed out to me by Mr. Stackhouse, who first observed that the *U. europæus* has a pair of distinct scales at the base of the calyx, which are pale and deciduous like the leaves; but that the *U. nanus* has a pair of dark coloured spots, not deciduous. These, when examined under a glass, are really scales, but very minute. The *calyx* in this species is scarcely at all woolly. Both species vary much as to hairiness, as well as in the length of their thorns; but the luxuriant and more upright growth of the former is strongly contrasted by the dwarfish and stunted appearance of the latter.

*Dwarf Furze*, or *Gorze*. *Whins*. On barren commons. Flowers all the year, but never more fully than in September and October. P.

ONO'NIS. *Cal.* with 5 divisions; segments strap-shaped: *standard* scored: *filaments* united without an opening: *legumens* swollen, sitting, simple, of 1 cell.

O. Flowers in bunches, solitary; leaves solitary or three together; branches thorny. sp.no'sa.

*Ludw.* 68—*Kniph.* 5—*Sheldr.* 79—*Blackw.* 301—*Riv. tetr.* 69, *Anonis*—*H. ox.* ii. 17. row 1. 1. f. 3—*Fl. can.* 783—*J. B.* ii. 391. 2—*Ger.* 1141. 1—*Fuchs.* 60—*Trag.* 869—*Matth.* 674—*Dod.* 743. 2—*Lob. obs.* 492. 2, and *ic.* ii. 28. 1—*Ger. em.* 1322. 1—*Park.* 994. 1—*Lonic.* i. 72. 1.

to make ley. Team horses may be supported by this plant, if it be cut young and bruised in a mill to break the thorns (Mr. Evans informs us that Mr. Davis of Lachtony, near Kidwelly, cultivates 10 acres of Furze, which he propagated by seed; with these whins, which he cuts every year, he keeps his whole team and riding horses through the winter; he gives it mixed with hay to his horned cattle. The produce per acre is from 12 to 15 tons weight. A man will bruise 36 bushels per day. This plant, in some parts of Wales, grows to 10 or 12 feet high, and its stems are often cut for fuel. E.) Goats, cows, sheep, and horses feed upon the tender tops.



*Stems* decumbent, woolly, reddish, thorny, especially from the base to the middle. *Thorns* awl-shaped, pungent, with sometimes one or two leaves. *Flowers* mostly solitary, but when two they are fixed to a cloven fruit-stalk. RETZ. Whole plant more woody and rigid than *O. arvensis*. *Stem* slightly hairy. *Branches* terminating in softish thorns. *Thorns* at the base of the young branches, strong, early in the summer not pungent. *Leaves* almost smooth. *Calyx* hairy; segments awl-shaped, unequal. *Blossom* twice as long as the calyx. WOODWARD. In its young state, before the thorns are formed, it has frequently been mistaken for the *O. arvensis*. *Flowers* red.

*Thorny Rest-harrow. Cammock. Ground Furze. O. spinosa* β. LINN. Fl. Brit. Barren pastures, hedge banks, holloways, either in a sandy or a marly soil. P. July.\*

*arven'sis.*

*O.* Flowers in bunches, two together; leaves three together, the upper ones solitary; branches without thorns, somewhat woolly.

*E. bot.* 682-*Ger.* 1142. 3.

In the autumn of 1779 I examined many hundreds of *O. arvensis* in the cornfields at Berkhamsted, Hertfordshire, without finding a single one with thorns. *Stem* and *branches* woolly. *Leaves* somewhat woolly, broader, more egg-shaped, and not so elliptical as those of *O. spinosa*. *Flowers* more numerous, mostly solitary, on the young shoots, alternate. *Calyx*, segments more tapering. Mr. WOODWARD. Mr. Pitt, of Pendeford, near Wolverhampton, sent me specimens which he assures me never become thorny, and that the thorny sort is never found in that neighbourhood. I found it in great plenty on St. Vincent's Rocks, without the least appearance of thorns on any of the plants, though I examined a great number. A smaller plant than the *O. spinosa*. *Stems* and *branches* woody, cylindrical, a little hairy. *Leaves* set with glandular hairs; the upper oblong-egg-shaped, toothed. *Leaf-stalks* short, fixed to a broad toothed leaf-scale. *Flowers* scattered, intermixed with leaves. *Calyx*, some of the hairs long and tapering, others short and tipped with glands; segments, four of them pressing on the standard, the lowermost supporting the keel. *Blossom* standard circular, with a small point at the end, with short hairs on the outside, of a fine rose-colour, streaked with deeper coloured lines; *wings* more than half as long as the standard, egg-shaped, white; *keel*

\* A decoction of the roots has been recommended in cases of stone and jaundice. Cows and goats eat it; sheep are very fond of it; horses and swine refuse it. LINN. A horse refused the whole branch, but eat of the younger shoots when picked off. Dr. STOKES.

coloured and streaked as the standard. *Anthers* yellow. *Germen* with hairs tipped with glands. *Seeds* about six. *Flowers* sometimes nearly white. The hairiness of the leaves and the want of thorns best distinguish this from the *O. spinosa*, whose thorns are so remarkable, and whose leaves are scarcely, if at all, hairy on the upper surface, though in both they are edged with hair-like glands terminating in a small globule.

*Hairy Rest-harrow. Ononis inermis.* HUDS. *O. arvensis* α. Fl. Brit. Mostly in light land, and cornfields. P. June.

Var. 2. Stems prostrate; whole plant clammy.

Whole plant clammy, not so downy as *O. arvensis*. *Flowers* larger and fewer. *Leaflets* oblong wedge-shaped. *Calyx* segments shorter and blunter. Whether distinct from *O. arvensis* it is difficult to say, but I am inclined to Mr. Hudson's opinion, as being removed into a garden it became upright, and more downy. If a variety it is of *O. arvensis* and not of *spinosa*. WOODWARD. This has been taken for the *O. repens* of Linnæus, but Mr. Afzelius informed me that species had not been found in England, which confirms Mr. Hudson's opinion, formed after cultivating them together, that this is not specifically different from the *arvensis*. Mr. Woodward describes the *arvensis* as more downy than this, but my specimens from the Southern coast are much more downy than those in the cornfields in the midland counties.

*Creeping Rest-harrow. O. repens.* LINN. *O. arvensis* γ. Fl. Brit. Sea shore in sandy soils, frequent. LIGHTFOOT. Field by Charlton Church, between the gravel pit and Woolwich, towards Gravesend, and on the sand downs by Deal, and near Yarmouth. RAY. [At Sandscale, and in Walney, plentiful. Common in dry sandy pastures in Low Furness. Mr. ATKINSON.]—(North Shore, near Liverpool. Dr. BOSTOCK. E.) P. June—July.

ANTHYLLIS. *Calyx* bellying; *legumen* roundish, covered.

A. Herbaceous; leaves winged, unequal; flowers in a double head. Vulneraria.

*Dicks. h. s.—Kniph.* 6—*Fl. dan.* 988—*E. bot.* 104—*Dill. elth.* 431. 320—*Riv. tetr.* 18. 1, *Anthyllis*—*Ger.* 1060. 1. and 1023. 1—*J. B. ii.* 362—*Dod.* 552. 1—*Lob. obs.* 530. 1, and *ic. ii.* 87. 2—*Ger. em.* 1240. 1—*Park.* 1093. 1.

*Stems* cylindrical, downy. *Leaves* downy, the hairs lying close, with five or six pair of leaflets. *Flowers* sitting; deep yel-

**LOW. RELHAN.** Each head of flowers supported by two floral-leaves, the larger with six or seven clefts, the smaller with four. The structure of the *filaments* is very singular; towards the top they swell out like a hollow bladder, in shape of an inverted pyramid, and the anthers are fixed to the central part of the base of the pyramid. *Style* thickest at the bend, thinner above and below. In England the *flowers* are seldom otherwise than yellow, but in Portugal they are uniformly scarlet. (*Calyx* membranaceous, whitish, hairy. E.)

*Kidney-vetch. Ladies'-finger.* Meadows and pastures, in chalk or a calcareous soil. Wick Rocks. Mr. SWAYNE.—Craven, Yorkshire. Mr. CALEY.—Arthur's Seat, Edinburgh. ST.—Limestone pits, Cradley, near Malvern Hill, Worcestershire. Mr. BALLARD.—(Common in Norfolk and Suffolk, wherever the soil is chalky. Mr. WOODWARD. E.)—Coast of Devonshire, common. P. May—Aug.

Var. 2. Blossoms scarlet, or purple.

In Pembrokeshire. RAY. [On the sand banks near Llandwyn, Anglesea. Mr. GRIFFITH. In Cornwall. Mr. STACKHOUSE.]\*

(On the downs of Sussex this plant is found with white blossoms. Mr. BORRER, in *Bot. Guide*. E.)

**PISUM.** *Calyx*, 2 upper segments shorter: *style* with 3 angles, keeled and pubescent above: *legumen* inflated.

**maritimum.** P. Leaf-stalks flattish above; stem angular; stipulæ arrow-shaped; fruit-stalks many-flowered.

*Smith spic. fasc.* 1. 9—*Fl. dan.* 338—*E. bot.* 1046—*Munt. phyt.* 825, 230—*Ger. em.* 1220. 5—*Park.* 1060. 4 and 5.

Whole plant, excepting the upper surface of the leaves, slightly downy. *Root* creeping. *Stems* angular. *Leaf-stalks* with many leaflets, flattish above, with tendrils. *Leaflets*, the outer smaller. *Leaf-scales* opposite, angular at the base on each side, scarcely toothed. LINN. *Roots* striking extremely deep in the earth. *Stems* trailing, short; the outline of the whole oval. *Leaves* numerous, alternate; *leaflets* oval, alternate, sitting, smooth, the outer not always smaller, on the lower leaves 5 to 7,

\* The country people obtain a yellow dye from it. It makes an excellent pasturage for sheep. Where the soil was a reddish clay, Linnæus observed the blossoms to be red, but in white clay white. Goats and cows eat it.

on the upper 9 to 11, there being always one more on the outer side of the leaf-stalk, generally cloven, sometimes simple. *Leaf-scales* in pairs, oval spear-shaped, broad, arrow-shaped at the base. *Flowers* towards the end of the fruit-stalks, crowded, on short pedicles. **WOODWARD.** *Blossom* pale red and purple.

*Sea Pea.* Sea shores. (On the shore at Walmer, Kent. Mr. SOWERBY. E.) On a stony beach between Aldborough and Orford, Suffolk. **RAY** and **WOODWARD.** Near Hastings, Sussex, and on the West side of Dungeness, near Lyd, in Kent. **RAY.** Rye and Pevensey, Sussex; Guildford, opposite the Comber; and Ingolm Mills, Lincolnshire. [On the sharp ridge running from Portland Island to Bridport, some distance to the right of the ferry, amongst loose pebbles, about 15 or 20 feet above high water mark; but the cows eat it down so that it is difficult to procure a specimen in flower. Mr. STACKHOUSE.] (Abundant on the beach near Walmer Castle, Kent. Mr. DILLWYN, in *Bot. Guide.* Sandown beach, Hampshire. **PULTENEY.** Beach near Penzance. **HEATH.** E.) P. July—Aug.\*

**O'ROBUS.** *Calyx* blunt at the base; the two upper teeth shorter but more deeply divided: *style* thread-shaped.

O. Stems drooping, hairy, branched; leaflets 7 to 12 pair. *sylvaticus.*

*Dicks. h. s.—E. bot. 518—Lightf. 16. at p. 390.*

*Stems* branched, scored. *Leaflets*, 6 or 7 pair. *Blossom* red without, within white, with purple lines. *Legumen* compressed. *Seeds* 2 or 3. **LINN.** *Stems* numerous, trailing, much branched, but slightly hairy. *Leaves* winged, alternate; *leaflets* oval, or elliptical, terminated by a point which is an extension of the mid-rib; on short hairy leaf-stalks, somewhat alternate, 6 to 12 pair, without an odd one, but with a sort of beard terminating the general leaf-stalk. *Flowers* numerous, to 12, on short pedicles, crowded, mostly pointing one way, on the top of a long naked fruit-stalk. *Stipulæ* half-harrow-shaped, two at the base of each general leaf-stalk, smaller than those of the *O. tuberosus*, and terminated by a more acute point. *Calyx* short, green, tinged with red, fringed, somewhat lipped, lips nearly equal, the upper with two teeth, the lower with three, rather longer.

\* In 1555, during a time of great scarcity, the people about Orford in Suffolk, were preserved from perishing by eating the seeds. If this plant, which grew there in great abundance upon the sea coast. Cows, horses, sheep, and goats eat it. It affords nourishment to the *Phalæna pisi.*



*Blossom* long and narrow. *Legumen* short, smooth. Mr. Woodward. (*Root* rather woody. E.)

(Dr. Smith in E. bot. p. 1153, and Fl. Brit. 1403, reports a very extraordinary variety to have been found at Hafod, in South Wales, by Mr. Todd, with simple leaves, five times as large as its natural leaflets, and which cannot by any culture be made to flower. E.)

*Bitter Vetch. Wood Peaseling.* Woods, hedges, pastures, dry rocky places, and banks of rivers. (Lowlands of Scotland. E.) Ten miles from Penrith; Gamblesby, Cumberland. RAY. Mr. WOODWARD. Below Brecknock Hills in the way to Cardiff, and not far from Bala, Merionethshire. Upper part of Merley Wood, near Oxford. Near Ross-Trevor, Ireland. RAY. [Woods about Airly Castle. Mr. DON. On the Tweed, about half a mile below the Buld. Dr. HOPE. About Cerrig y Druidion, and Ys pytty, Denbighshire. Mr. GRIFFITH.]

P. May—July.

tubero'sus. O. Leaves winged, spear-shaped; stipulæ half-arrow-shaped, very entire, (toothed at the base; Fl. Brit. E.) stem simple.

*Dicks. h. s.—Curt.—E. bot.* 1153—*Riv. tetr.* 59, *Orob. rad. tub.—Sibbald.* 1—*Ger. em.* 1237. 2—*H. ox.* ii. 21, row. 2. f. 3—*Fl. dan.* 781—*Thal.* 1—*Park.* 1062. 5.

*Stems* at first drooping, but upright when in flower. LINN. (*Root* tuberous, black on the outside. Fl. Brit. E.) *Leaflets* one to three pairs, sitting, elliptical, the upper ones narrower and nearly strap-shaped, without an odd one, but the leaf-stalk is extended into a sort of point. *Stipulæ* in pairs at the base of the leaf-stalks. *Flowers* four or five in a bunch, on short slender pedicles. Mr. WOODWARD. *Stems* with two or three membranaceous leafy edges. *Leaflets* with three longitudinal veins, and terminated by a sharp point. *Style* strap-shaped, not pointed at the end. *Seeds* compressed, about twelve. *Blossoms* purple, large, three or four together. *Legumen* flattish, black, pendant.

*Heath Peaseling. Tuberous Orobus. Cor-meille,* of the Highlanders. Moist heaths and woody meadows, not rare.

P. April—May.\*

\* The roots, when boiled, are savoury and nutritious; ground to powder they may be made into bread. They are held in esteem by the Highlanders of Scotland, who chew them, as our people do tobacco, and find that they prevent the uneasy sensation of hunger. They imagine that they promote expectoration, and are very efficacious in curing disorders of the lungs. They

**LA'THYRUS.** *Cal.* 2 upper segments shorter : style flat, broader upwards, woolly on the upper surface : *legumen* generally equal, broad.

(1) *Fruit-stalks 1-flowered.* [*L. hirsutus*.]

**L.** Tendrils without leaves ; stipulæ arrow-heart-shaped. Aph'aca.

*Curt.-E. bot.* 1167.—*Gies.* 41—*Mill. ill.* 43—*Lob. obs.* 518. 1, and *ic.* ii. 70. 1—*Ger. em.* 1250—*Park.* 1067—*H. ox.* ii. 4. 7.

*Stems* four-cornered, trailing. *Stipulæ* oval-spear-shaped, arrow-shaped at the base, in pairs, smooth, somewhat sea-green, marked underneath with numerous parallel ribs, larger towards the top of the stem. *Fruit-stalks* long, from the bosom of the leaf-scales, alternate. *Tendrils* solitary, simple, opposite to the fruit-stalks. *Floral-leaves* awl-shaped, minute, 1 at the base of each flower. *Calyx* divided almost to the base ; segments equal, smooth, nearly as long as the blossom, strap-spear-shaped. *Blossom* greenish yellow at the base. **Mr. WOODWARD.** (*Legumen* compressed, smooth. *E.*) The stipulæ in this plant supply the place of leaves, and as such they might be considered, but the real leaves are very minute, and only exist, according to Mr. Curtis, for a short time after the sprouting of the seed. *Flowers* yellow, small.

*Yellow Vetchling.* Sandy cornfields and meadows. [Histon, near Cambridge, and between Norwich and Bungay. **WOODWARD.** (Malton fields. **TEESDALE**, and cornfield at Monckton near Rippon. **Mr. BRUNTON.** Cornfields near the chalk pits, Newport ; and in corn near Ongar and South End, Essex. **Mr. FORSTER, jun.** Sunderland Ballast hills. **Mr. WINCH,** in *Bot. Guide. E.*) A. June—Sept.\*

**L.** Leaves simple ; stipulæ awl-shaped.

Nisso'lia.

know how to prepare an intoxicating liquor from them. *Penn. tour.* 1772. p. 310. *Ray's hist. plant.* p. 916. (This plant is supposed to be the *Chara* named in Cæsar's Commentaries, mentioned also by Dio, on which, mixed with milk, the soldiers of Valerius's army subsisted under a penury of bread. **PULTENEY. E.**) Horses, cows, goats, and sheep eat it.

\* The seeds, both of this and of all the other species, are nutritious, either eaten in broth or made into bread.

*Curt.-E. bot.* 112—*Burb.* iii. 45. 1—*Dod.* 529. 1—*Lob. obs.* 518. 2, and *ic.* ii. 71. 1—*Ger. em.* 1249. 2—*Park.* 1079. 4—*J. B.* ii. 309. 1.

*Stem* upright. *Tendrils* none. *Leaf-scales* very small. LINN. *Stem* upright, simple, angular, twisted, lightly hairy. *Leaves* alternate, smooth, sword-shaped, resembling those of Grass. *Stipulæ* in pairs, at the base of the leaves. *Fruit-stalks* axillary, slightly hairy, (shorter than the leaves, with rarely more than one flower. *Fl. Brit. E.*) *Flower-scales* awl-shaped, small, one at the base of each flower. *Blossom* beautiful crimson. *Legumen* strap-shaped, bending downward, slightly downy, terminated by a straight style. WOODWARD.

*Crimson Grass Vetch*, or *Vetchling*. Borders of cornfields and pastures. Ripton, Huntingdonshire. Mr. WOODWARD. (Thelveton Churchyard, near Diss, Norfolk. Mr. WALKER. —At Sigglesthorpe in Holderness. Mrs. WHARTON. In an old chalk pit, by the road from Houghton to Amberley. Mr. BORRER. In Higham hill field, and near Hagger lane, Walthamstow. Mr. E. FORSTER, jun. in *Bot. Guide. E.*) Woods at Belmont, Staffordshire. Mr. PITT. Hadsor Wood, near Droitwich. Mr. BAKER. About Teignmouth. Mr. MARTYN. Borders of a cornfield near Wick Cliffs. Mr. SWAYNE. Cottonfield, Stafford, in the hedge bank on the upper part.

A. May.

The leaves are so like those of grass, that unless the plant be in flower it may be readily overlooked. It is very beautiful, and merits a place in our gardens.

(2) *Fruit-stalks with more than 1 flower.*

hirsutus.

L. *Fruit-stalks* mostly 2-flowered; *tendrils* with 2 leaves; *legumens* hairy; seeds rough.

*E. bot.* 1255—*J. B.* ii. 305—*Riv. tetr.* 41, *L. siliquis. hirsutis.*

*Flowers* purple. LINN. *Stems* angular, twisted, slightly hairy. *Leaflets*, a single pair, slightly hairy, with three strong ribs, terminated by an awn. *Leaf-stalks* triangular, furrowed above, terminating by a tendril. *Tendrils* mostly dividing into three. *Stipulæ* half-arrow-shaped, pointed, with long appendages, two at the base of each leaf-stalk. *Fruit-stalks* very long. *Flowers* at about one or one and a half inch from each other. *Flower-scales* awl-shaped, small, about a quarter of an inch beneath the terminating flower, and at the base of the short pedicle of the lower. *Calyx* one-third as long as

the blossom; clefts extending half way down; segments five, equal. *Pods* short, covered with hair, each hair proceeding from a gland. **WOODWARD.** *Blossom* with yellow lines within. (*Stems* climbing. *Stigma* permanent, very blunt. E.)

*Rough-podded Vetchling.* Cornfields and ditch banks. Fields about Hockley and Rayleigh; and elsewhere in Rochford, Essex. Near Munden Church and Laydon Hall in Dengy Hundred, Essex. **BLACKSTONE.** [On the sides of two hills, the one North of Pensford, on the Bristol road, the other between Pensford and Keynsham, Somersetshire. Mr. **SWAYNE.**] (Sunderland Ballast Hills. Mr. **WINCH.** in *Bot. Guide.* E.) A. July.

(3) *Fruit-stalks many-flowered.*

**L.** Tendrils with 2 leaves, quite simple; leaflets spear-shaped. **LINN.** Tendrils sometimes 3-cleft, **LINN.** and sometimes with 2. **WOODWARD.**

*Kniph.* 11—*Curt.* 170—*E. bot.* 670—*Riv. tetr.* 43. *L. pratensis* —*Fl. dan.* 527—*J. B.* ii. 304. 2—*Walc.—H. or.* ii. 2. 2—*Anderson—Lob. obs.* 517. 3, and *ic.* ii. 69. 2—*Ger. em.* 1231. 6—*Park.* 1061. 1.

*Leaflets* between coiled and rolled inwards. *Stipulae* very entire, halberd-shaped. *Fruit-stalks* four-cornered. **LINN.** *Stem* much branched. *Leaves* smooth. *Leaf-stalks* furrowed, three-cornered, terminating in tendrils. *Stipulae* spear-arrow-shaped, large, in pairs at the base of each leaf-stalk. *Fruit-stalks* long, with four, five, or more flowers. *Pedicles* short, hairy. *Flower-scales* awl-shaped, very minute, 1 at the base of each pedicle. *Calyx* one-third as long as the blossom, somewhat hairy, cloven half way down; segments rather unequal. *Legumen* black, smooth. **WOODWARD.** *Blossom* yellow; standard with six or seven purple lines just above the claw. *Anthers* oblong.

*Tare Everlasting.* *Common Yellow,* or *Meadow Vetchling.* Meadows, pastures, woods, thickets, and hedges.

P. July—Aug.\*

\* *L. pratensis* has been recommended as a new plant for the experiments of the farmers, and premiums have been offered for its cultivation. But it does not seem to be agreeable to cattle, as where they have a choice of food they seldom touch it. Besides it produces very few seeds, and those are for the most part devoured by a species of *Curculio*. Mr. **SWAYNE.**



*sylvestris*. *L.* Tendrils with 2 leaves; leaflets sword-shaped; stem with membranaceous borders between the knots.

*E. bot.* 805—*Riv. tetr.* 39, *L. sylvaticus*. very large—*Clus.* ii. 229. 2—*Lob. obs.* 517. 1. and *ic.* ii. 68. 2—*Ger. em.* 1229. 1—*Park.* 1063. 3—*Fuchs.* 572—*Trag.* 613—*Dod.* 523. 2—*J. B.* ii. 302. 2—*H. ex.* ii. 2. 4.

Stems widely spreading, climbing or trailing. Leaf-stalks rough at the edge. Leaflets strap-shaped, not broader than the stem. Stipulæ awl-shaped, very narrow. LINN. Flowers not more than six in a bunch, as small again as those of *L. latifolius*. HALL. Stipulæ half-arrow-shaped, in pairs. Tendrils cloven into three. Floral-leaves awl-shaped, one at the base of each pedicle. WOODWARD. (Fruit-stalks longer than the leaves, bearing from four to ten flowers. Blossom purple, wings violet, keel greenish. Legumen declining, smooth, deep red colour. *Fl. Brit. E.*)

Var. 2. Leaves broader than the stem. Blossom red and white.

The leaves are sometimes even broader than those of the next species, and have more than three ribs, but the stipulæ are always narrower than the stem in this species, and always broader in the *latifolius*. The flowers in the *latifolius* are considerable larger and more numerous than in the *sylvestris*.

Narrow-leaved Everlasting Pea, or Vetchling. Woods and hedges. Between Castle Campes and Bartlow, Cambridge-shire. RAY. Between Bath and Bristol; and Conway, Wales. HUDSON. Wood sides between Pershore and Eckington. Worcestershire. NASH. [Shelton Bank near Salop. Mr. AIKIN. On a hill near Pensford, with *L. hirsutus*. Mr. SWAYNE.] (Sedman's Wood, near Scarborough. Mr. TRAVIS. Rocks by Red Neese, near Whitehaven: this station was by Ray, and subsequent botanists referred to *L. latifolius*, but the error has recently been exposed by the Rev. J. Harriman, by whose authority it is now removed. E.) P. July—Aug.

*latifolius*. *L.* Tendrils with 2 leaflets; leaflets spear-shaped; stem with membranaceous borders between the knots.

*E. bot.* 1108—*Mill. ill.—Fl. dan.* 785 and 325—*Riv. tetr.* 40, *L. narbonensis*—*Garid.* 108. at p. 300—*Matth.* 971.

(Much like the preceding, but larger. Tendrils often five-cleft. Flowers numerous, very large, beautiful. *Fl. Brit. E.*)

*Leaflets* rolled in, elliptical, several times broader than the stem, sometimes four. *Stipulæ* broader than the stem, nearly halberd-shaped. LINN. *Leaves* with four or five ribs; varying much in breadth, but always broader than the stem. *Blossom* pale purplish rose-colour.

*Broad-leaved Everlasting Pea*, or *Vetchling*. Woods and hedges. Modingley, Eversden, and Kingston Woods, near Cambridge. [Severn Stoke Copse, Worcestershire. Mr. BAL-LARD.] (Hawnes and Bromham, Bedfordshire. Rev. Dr. AB-BOT. *E. bot. E.*) P. July—Aug.\*

L. Tendrils with many leaflets; stipulæ spear-shaped. palus'tris.

*E. bot.* 169—*Fl. dan. dan.* 399—*Pluk.* 71. 2—*Rupp.* 1. at p. 210.

*Stem* with leafy borders. *Leaflets* six, spear-shaped. *Sti-pulæ* half-arrow-shaped. *Fruit-stalks* with generally three flow-ers. *Blossom* blue. RETZIUS. Whole plant smooth. *Stems* with somewhat membraneous edges. *Leaflets* two or three pair, spear-shaped. *Tendrils* 3-cleft. *Flowers* three to six or more, pointing one way. WOODWARD. *Blossom* blue pur-ple. (*Legumen* pendulous, smooth. *Fruit-stalks* twice as long as the leaves, bearing three to six flowers. *Stem* climbing, with tendrils four feet long. E.)

*Chickling Vetch. Marsh Vetchling*. Moist meadows and pastures. [Peckham Field on the back of Southwark. RAY. Wood near Abingdon. BLACKSTONE. Charley Forest, near Bardon Hill, Leicestershire. Dr. PULTENY. Lancashire and Yorkshire. HUDSON. Near Ranaugh, Norfolk. Mr. HUM-PRY.] (Marshes near Beverley, abundant. TEESDALE. Near Leeds, and Hull. E.) P. July—Aug.

VICIA Summit bearded across underneath: le-gumen generally with knots like protube-rances.

(1) *Fruit-stalks* long; many-flowered.

\* The beauty of its flower has obtained it a place in our shrubberies and flower borders. Dr. STOKES; (and Dr. SMITH suggests that the prodigious crop yielded by this plant, and the lasting nature of its roots, even on a barren soil, should render it a fit object for agricultural experiments. E.)

*sylvatica*. V. Leaflets oval; stipulæ finely toothed, (crescent-shaped. Fl. Brit. E.)

*Dicks. h. s.*—*Fl. dan.* 277—*E. bot.* 79—*Pluk.* 71. 1—*Hall.* 12.  
2. *at. i.* p. 172.

Stems numerous, and so much branched that they choke whatever plants they come near. Leaves with eight or nine pair of leaflets, and terminated by a long and very much branched tendril; leaflets egg-shaped, oftener alternate than opposite; smooth, with a net-work of veins, and terminated by a short point. Stipulæ in pairs, small, deeply divided into several awl-shaped segments. Fruit-stalks long, thick, four-cornered, and scored; upright. Flowers numerous, on the upper part of the fruit-stalk pendent, growing irregularly, mostly in two's and three's, with interruptions. Calyx, teeth awl-shaped. Blossom rather large; standard and wings whitish, beautifully veined and streaked with blue. Mr. WOODWARD. Blossom standard without a sharp point in the notch; keel not shorter than the wings. Style and summit so slender that the beard on the under side at the end, can scarcely be discerned.

*Wood Vetch*. [Malham, near Settle, Yorkshire, and elsewhere in the North. WOODWARD. Thicket on the North side of Bredon Hill, Worcestershire. NASH. Orton, Cumberland; Barrowfield Wood, near Kendal. WOODWARD. Woods about Clifton upon Teme, Worcestershire, in moist places. ST. Shelton bank near Salop. Mr. AIKIN. Woods on a limestone about Newton Cartmel for a few years after the woods have been cut down. Mr. HALL. Urswick Woods, climbing up the trees for several yards, so as to be very ornamental. Mr. ATKINSON. Beech Wood, close by the monument on Lansdown, Bath. It is the most beautiful climber of this island, both the leaves and the flowers being extremely elegant. Mr. SWAYNE. (Woods near Scarborough. Mr. TRAVIS. Near the bridge over the Elwy called Pont y rallt coch, Denbighshire. Mr. GRIFFITH. Culgaith woods, by Eden, and Keswick. HUTCHINSON. Isell woods, Cumberland, where it covers the rocks in beautiful festoons. Rev. J. DODD. Castle Eden Dean, Durham. Mr. WINCH, in *Bot. Guide*. E.)

P. July—Aug.

*Cracca*.

V. Flowers tiled; leaflets spear-shaped, pubescent; stipulæ entire.

*Kniph.* 10—*Curt.* 310—*Fl. dan.* 804—*E. bot.* 1163—*Riv. tetr.* 49, *Cracca*—*H. ox.* ii. 4. 1.

*Leaflets* rolled in. In cornfields large and luxuriant, in meadows small and hoary. *Blossom* sometimes white. LINN. *Stem* when climbing on bushes three or four feet high, four cornered, scored, slightly hairy. *Branches* numerous, short, alternate, from the bosom of the upper-leaves. *Leaves* alternate, very long; *leaflets* strap-spear-shaped, oftener alternate than opposite, hairy, terminated by a sharp point, from ten to twelve pair. *Tendrils* terminating the leaf-stalk, branched. *Stipulae* half-arrow-shaped, pointed. *Calyx* bluish, the two upper teeth extremely short, the lowermost longest. *Flowers* small, very numerous, pendent, closely tiled. WOODWARD. *Stem* angular, scored, very long, climbing. *Leaflets* rounded at the end, and terminated by a sharp point. *Tendrils* terminating the leaf-stalks. *Fruit-stalks* from the bosom of the leaves, longer than the leaves. *Blossom* bluish purple; with two deeper purple spots at the extremity of the keel; *standard* heart-shaped, without a short point in the notch. *Legumen* with five seeds, (smooth, brown. E.)

*Tufted Vetch*. Hedges, shady places, meadows, fields, [and willow beds. ST.] P. July—Aug.\*

(2) *Flowers* 2 or more together, nearly sitting.

V. *Legumens* mostly in pairs, upright; *leaflets* inversely spear-shaped, blunt, notched; *stipulae* toothed; seeds compressed, (very smooth. E.) *sativa*.

*E. bot.* 334—*Kniph.* 1—*Walc.*—*Riv. tetr.* 55, *Vicia*.—*Fl. dan.* 522—*Clus.* ii. 235. 1—*Dod.* 531. 1—*Lob. obs.* 522. 3, and *ic.* ii. 75. 1—*Ger. em.* 1227. 1—*Park.* 1072. 1—*H. ox.* ii. 4. 12—*J. B.* ii. 310. 2.

(*Lower-leaves* bent back. *Stems* of various size, climbing or prostrate. *Plant* more or less hairy, *Fl. Brit. E.*) *Stipulae* marked underneath with a spot as though it had been burnt. LINN. *Stem* upright, scored. *Leaves* winged; *leaflets* about six pair, opposite, elliptical, blunt, the mid-rib lengthened into a projecting point. *Tendrils* terminating the leaf-stalk, branched. *Stipulae* in pairs, spear-shaped, toothed, marked ed, marked with a black shining spot. *Flowers* mostly two together. *Blossom* reddish purple. WOODWARD. *Calyx* teeth nearly equal. *Seeds* black.

\* Dr. Plot, in his *Nat. Hist. of Staffordshire*, p. 204, says, that this and the preceding species advance starven or weak cattle above any thing yet known.



# DIADELPHIA. DECANDRIA. Vicia.

*Common Vetch*, or *Tare*. Dry meadows, pastures, and corn-fields. A. April—June.\*

Var. 2. HUDSON. Seeds white.

Var. 3. Leaves narrower, somewhat strap-shaped. LINN.

*Riv. tetr.* 54, *V. angustif.*—*Dod.* 542. 2—*Lob. obs.* 522. 3, and *ic.* ii. 75. 2—*Ger. em.* 1227. 4—*Park.* 1071. 1—*H. or.* ii. 4. 11—*J. B.* 312.

More common than var. 1. So nearly allied to it that there scarcely seems to be any fixed limits between them. LINN. *Stem* trailing. *Leaflets* more pointed. *Stipulæ* marked, but less distinctly, with the burnt dots. *Flowers* mostly solitary, but of the same colour of those of var. 1. It is clearly a variety of *V. sativa*, as it may be traced through all its stages from its smallest size up to the largest plants of *V. sativa*. Mr. WOODWARD. *Stems* scored, undivided. *Tendrils* three-cleft. *Leaflets* of the lower-leaves heart-shaped, two or three pair; those of the upper four or five pair, strap-shaped, blunt at the end, the midrib lengthened out into a thorn-like point. *Blossom* purple. *Seeds* ten to twelve.

*V. lathyroides*  $\beta$ , and possibly  $\alpha$ . HUDS. Mr. WOODWARD.

Dr. Sibthorpe considers this as a distinct species, and gives the following specific character. *V. angustifolia*. *Legumens* nearly sitting, about two together, expanding: *lower leaflets* inversely heart-shaped, with a point in the notch; *upper ones* strap-shaped. *Fl. or.* A. June.

Shotover, and divers other places. RAY. (At Weymouth. Sir T. G. CULLUM. Among short grass, in Richmond gardens. Dr. SMITH. E.) [In the lanes in the valleys of Dartmoor.] A. May.

se'pium.

V. *Legumens* mostly 4 together, upright: *leaflets* egg-shaped, very entire, the outer ones gradually smaller.

*Kniph.* 5—*E. bot.* 1515—*Riv. tetr.* 56, *V. sepium*.—*Fl. dan.* 699—*Walc.—Trag.* 624—*J. B.* ii. 313. 2—*Ger.* 1052. 1. and *em.* 1227. 2—*Fuchs.* 110—*Matth.* 547—*Anderson—Lonic.* i. 248. 1.

\* In Gloucestershire and Worcestershire it is sown as pasturage for Horses, and eaten off early enough to allow of Turneps being sown the same year. The seeds are excellent food for Pigeons. Horses, cows, sheep and goats eat it.

(Stems climbing with tendrils; two feet long, furrowed, but little branched. *Calyx* hairy. *Legumen* brown, smooth, dotted. *Fl.* Brit. E.) *Leaves* doubled together. *Bunches* shorter than the leaves, with mostly four flowers. LINN. *Stems* upright. *Leaves* alternate, winged; *leaflets* sometimes egg-spear-shaped, opposite; mid-rib lengthened out into a projecting point. *Stipulæ* half-arrow-shaped, pointed, small. *Tendrils* branched, terminating. *Flowers* three or four, in the bosom of the upper-leaves. *Calyx* segments nearly equal. *Blossom* dirty purple. Mr. WOODWARD. *Calyx* rough with hair. *Flowers* on very short fruit-stalks; sometimes white.

*Bush Vetch.* Woods, hedges, pastures, meadows.

P. May—June.\*

(3) *Flowers* solitary, nearly sitting.

V. *Legumens* solitary, upright, smooth; *leaflets* about 6, lathyroides. the lower ones inversely heart-shaped; *stipulæ* half-arrow-shaped, very entire; seeds cubic, warty. *E. bot.*

*Dicks. h. s.—Jacq. mis. ii. 18—E. bot. 30—Fl. dan. 58—Riv. tetr. 169. V. minima.—Kniph. 3—Herm. par. 242.*

*Stipulæ* not spotted. *St.* Whole plant hairy except the seed vessels. *Root* small, fibrous, annual. *Stems* several, a foot high or less; weak trailing. *Leaflets* four to six pair, and never more; opposite, the upper ones mostly spear-shaped. *Tendrils* never branched. *Stipulæ* half-arrow-shaped, the upper spear-shaped, narrow pointed. *Flowers* small, bluish purple. *Legumen* upright, smooth, dotted. *Seeds* cubic.

The true leading characters of this species are, the blossom being scarcely longer than the calyx, the seeds cubic, and the tendril never branched. WOODWARD. In the fig. of *E. bot.* *Fl. dan.* and *Kniphoffius*, the tendrils are wanting; in those of

\* It shoots earlier in the spring than any other plant eaten by cattle, vegetates late in the autumn, and continues green all winter. But it is difficult to collect the seeds, as the pods burst and scatter them about, and moreover, hardly a third part of them will vegetate, being made the nidus of an insect. A patch of them sown in drills in a garden was cut five times in the course of the second year, and produced at the rate of twenty-four tons per acre of green food, which when dry would weigh nearly four tons and a half. Bath. Soc. iii. Mr. SWAYNE, who has since observed to me, that though very palatable to all kinds of cattle, it is difficult to cultivate on a large scale, the seeds being generally devoured by the larvæ of a species of *Attelabus*, which larvæ are the prey of a species of *Ichneumon*.

Jacquín and Rivinus they are represented as unbranched, agreeable to Mr. Woodward's observation, but in Dickson's specimens published in his fourth fasciculus of dried plants, the tendrils are branched.

*Vicia lathyroides*, var.  $\gamma$ . HUDS. *Errum soloniense* Sp. pl. Dr. Smith informs us is no other than this plant, and that it sometimes bears white flowers.

*Strangle Vetch*, or *Tare*. *Spring Vetch*. Dry pastures, gravel pits, and cornfields, in gravelly, sandy, and chalky soils. King's Park, Edinburgh. LIGHTFOOT. In the dry parts of Hyde Park. Mr. DICKSON. [Norfolk. Mr. WOODWARD.] (Near Beverley. TEESDALE. In the Warren at Esher, Surrey. Mr. BORRER. Sweffing, near the church, and Aldborough Common, Suffolk. Rev. G. CRABBE. Near the Signal House at Westleton, Suffolk. Mr. DAVY. *Bot. Guide*. On the chalky banks near Greenhithe. SHERARD. Sea shore South of Shields; and salt meadows below Gateshead. Mr. WINCH. E.)

A. May.

lu'tea.

V. Legumens sitting, bent back, hairy, solitary; with 5 seeds; standard smooth. LINN.

*E. bot.* 481—*H. ox.* ii. 21. row. 2. f. 2—*J. B.* ii. 313. 1.

*Leaves* sometimes spear-shaped, sometimes dented. *Legumen* hairy or smooth. *Stipulae* alternately very entire, or with three teeth. LINN. *Leaves* either inversely heart-shaped, dented, oblong, or spear-shaped. *Flowers* sometimes in pairs. HUDSON. *Leaves* alternate; *leaflets* three to five pair, mostly alternate, oblong, blunt, and dented, or strap-spear-shaped. *Stipulae* spear-shaped, minute. *Tendrils* terminating, simple, or divided into two or three. *Blossom* pale yellow. *Seed-vessel* woolly. WOODWARD.

*Yellow Vetch*. (On the shore near Shoreham. Mr. J. MIDBLETON. On the beach at Orford, on the side next the river about half a mile from the river's mouth. Mr. HUMPHREY. Sand pit on the side of Glastonbury Tor Hill. Mr. DAWSON TURNER. *Bot. Guide*. About Pinxton and Derby. PILKINGTON. E.) About Weymouth.

A. June—July. (P. Aug. *Fl. Brit. E.*)

hy'brida.

V. Legumens sitting, bent back, hairy, with 5 seeds; standard woolly.

*Jacq. hort.* 146—*E. bot.* 482—*J. B.* ii. 314. 1.

Nearly allied to *V. lutea*. *Leaflets* inversely egg-shaped, dented, small, sprinkled with hairs. *Stipulæ* of the stem not brown, but entirely green. *Flowers* yellow, greyish above, hairy. In other respects accords with *V. lutea*. LINN. This plant certainly accords with *V. hybridia* of E. bot. and is perfectly distinct from the *V. lævigata*. (We find, (*Bot. Guide* p. 527), some reasons assigned by the Rev. Dr. Beeke why *V. hybridia* and *V. lutea* should not be considered distinct species, these, however, do not appear to be confirmed by the experience of Mr. Turner. E.)

*Bastard Vetch*. Meadows and pastures. Glastonbury Tor.  
P. June—Aug.

V. Legumens sitting, solitary, bent back, smooth; stems lævigata. upright; leaves very smooth.

E. bot. 483.

*Leaves* and whole plant entirely smooth. *Stipulæ* green, or pale brown. *Flowers* like those of the *lutea*, but their calyx-teeth are generally more equal in length. In colour they are for the most part less yellow, and sometimes quite blue, as represented in the figure, but both species are extremely variable in that respect. *Legumens* quite smooth in every stage of their growth, and contain rarely more than five seeds. E. bot.

*Smooth-podded Sea Vetch*. About Weymouth. (Portland Island, Chesil Bank, &c. E.) P. July—Sept.

V. Legumens on fruit-stalks, solitary, upright; leaflets 4, bithynica. oval-spear-shaped; stipulæ toothed.

Jacq. hort. 147—E. bot. 1842—Allioni 26. 2.

(Stems many, climbing with tendrils, branched, angular, furrowed smooth. *Leaves* in two pairs, with leaflets large, egg-spear-shaped, sharp-pointed, slightly hairy on the under surface. *Stipulæ* large, half-arrow-shaped. *Flowers* axillary, solitary; on fruit-stalks of various length, very rarely two-flowered. *Seeds* five or six, roundish, smooth, mottled with black and grey. Fl. Brit. The breadth of the leaflets is variable. Rev. Dr. BEEKE. E.) *Seeds* protuberating. *Flowers*, standard and keel red purple, wings yellowish.

*Rough-podded Purple Vetch*. Gravelly cornfields and pastures, and ditch banks near Doncaster, Yorkshire. Isle of Purbeck. [Woods near Clifton upon Teme, Worcestershire. Str. Portland Island half a mile to the left of the Ferry, on



# DIADELPHIA. DECANDRIA. Ervum.

loose sand banks. Mr. STACKHOUSE.] (Near Southwick, on the cliffs towards Brighton. Mr. BORRER. By the road side about two miles from St. Asaph on the way to Chester. Rev. H. DAVIES. On most of the red cliffs of the Devonshire coast. Rev. Dr. BEEKE, in *Bot. Guide*. E.) P. July—(Aug. E.)

**ERVUM.** *Calyx* with 5 divisions, as long as the blossom: (*stigma* capitate, hairy all over. E. bot. E.)

tetrasper-  
mum.

E. Fruit-stalks mostly 2-flowered; seeds 4, globular.

*Curt.-Riv. tetr.* 53, *Cracca minor siliquis gemell.*—E. bot. 1223—*Ger.* 1052. 2—*Fl. dan.* 95—*J. B.* ii. 315. 2—*H. ex.* ii. 4. 16—*Anderson.*

*Stem* 2-edged, nearly 4-cornered. *Leaflets* generally 10, and mostly alternate. *Fruit-stalks* of a hair-like fineness, with one or two flowers. *Flowers* small, violet, often blood-coloured. *Legumen* oval-oblong, smooth. LINN. *Stem* weak, much branched. *Leaflets* about five pair, strap-spear-shaped, or strap-shaped, generally somewhat alternate. *Tendrils* frequently simple. *Fruit-stalks* from the bosom of the leaves, as long as, or longer than the leaves, solitary, or in pairs. *Legumen* perfectly smooth. Mr. WOODWARD.

*Smooth-podded Tare. Fine Tare.* Cornfields, hedges, and borders of ploughed fields. A. June.

Var. 2. Seeds 5, 6, or 7, rarely 4. Stem lower, extremely branched. These differences could not proceed from luxuriance of soil, as the spot where it grew was a remarkably dry gravel. Near Cambridge. Mr. WOODWARD.

hirsu'tum.

E. Fruit-stalks many-flowered; seeds 2, globular; (legumens rough with hairs, E.)

*Dicks. h. s.*—*Curt.-E. bot.* 970—*Dod.* 542. 3—*Lob. obs.* 522. 2. and *ic.* ii. 76. 1—*Ger. ent.* 1228—*Park.* 1069—*Riv. tetr.* 53, *Cracca minor.*—*J. B.* ii. 315. 1—*Fl. dan.* 639

(Much resembling the preceding species, but the stem smoother, leaflets rather broader and more reflected. *Fl. Brit.* E.) *Stems* weak, much branched, angular, scored. *Leaf-scales*, the lower with two or three awl-shaped teeth, the upper awl-shaped, entire. *Leaflets* mostly strap-shaped, eight to twelve pair, somewhat alternate, terminated by a branched tendril. *Fruit-stalks*

axillary, shorter but not so slender as in the *E. tetraspermum*. Flowers 2, 3, or 4, on very short pedicles; when 2, separate; if 3, two of them together; if 4, in pairs. Legumen hairy. WOODWARD. Plant smooth, except the legumens. Flowers two to seven, pale purple, or white. Both in this and the preceding species the summit is bearded underneath.

*Fine Tare. Rough-podded Tare.* Sandy cornfields and meadows. (A. June—Sept. E.)\*

**ORNI'THOPUS.** *Seed-vessel* cylindrical, but jointed and crooked.

**O.** Leaves winged; legumens bowed in, much larger than perpusillus. the winged flower-scales.

*E. bot.* 369—*Kniph.* 7—*Dod.* 544—*Lob. obs.* 527. 2, and *ic.* ii. 81. 2—*Ger. em.* 1241. 3—*Park.* 1092. 1—*H. or.* ii. 10. 13—*Lob. adv.* 403. 1, and *ic.* ii. 94. 1—*Ger. em.* 1241. 4—*Park.* 1092. 1, of chap. 23.

Root slender, nearly as long as the stems; lateral fibres few. Stems trailing, from 1 to 6 inches high. Root-leaves numerous, prostrate, the lowermost sometimes on leaf-stalks, the rest sitting; leaflets egg-shaped, or elliptical, opposite, or alternate, from 3 to 14 pairs, with an odd one smaller. Flowers 1 to 5, terminating, opposite a leaf. Blossom standard reddish white, with red lines. Legumen slightly compressed, and bowed inwards. St. Leaflets set with very fine silvery hairs. Flowers 2 and 3 together, generally terminating. Blossom standard very slightly notched at the end, marked with crimson lines, the claw yellowish brown; wings white, with a reddish tinge; keel pale straw-colour. Seeds 6. A beautiful plant, and not uncommon on dry heaths and downs; varying from one inch to a foot in the extent of its branches.

*Common Bird's-foot.* Sandy banks, road sides, heaths and pastures. Near Lichfield. Mr. WHATELY. Winson Green near Birmingham. St. Brandon Hill near Bristol. Mr. SWAYNE. Near Knaresborough, Yorkshire. Mr. ROBSON. (Park quarry near Liverpool. Dr. BOSTOCK. Moushold Heath near Norwich, and elsewhere in Norfolk. Mr. WOODWARD. E.) Washwood Heath near Birmingham. A. May—Sept.

Var. 2. Flowers entirely yellow.

Each leaflet with a dark purple blotch. About Sidmouth. May.

\* Horses, cows, goats, and sheep eat it. LINN. In wet seasons whole fields of corn have been overpowered and wholly destroyed by it.

**HIPPOCREPIS.** *Seed-vessel* many-celled, compressed, crooked, with several notches along one of the seams.

como'sa. H. Legumens on fruit-stalks, crowded, bowed, serpentine.

*Jacq. austr.* 431—*Riv. tetr.* 97. 2, *Ferrum equinum comosum*—*E. bot.* 31—*Col. ecphr.* 301. 1—*Dicks. h. s.*—*Park.* 1092. 4—*H. ox.* ii. 10. 3—*Ger.* 1056. 2—*J. B.* ii. 348. 1.

*Stems* several, ascending, a span high, smooth. *Stipulæ* as it were running down. *Leaflets* 15, oval-strap-shaped, expanding, of a firmish texture. *Fruit-stalks* between angular and scored, longer than the leaves, from the bosom of the upper leaves, two or three. *Umbel* orbicular, with eight flowers. *Blossom standard* somewhat arched, scored underneath, not bent back at the edges except at the base, which is dented, whence there appears, as it were a pore on each side. LINN. *Root* thick, woody. *Stems* much branched, trailing, two to nine inches long. *Stipulæ* in pairs, oval, blunt. *Leaflets* seldom more than six pair, opposite, heart-shaped, or elliptical and dented. *Flowers* 6 to 10, disposed in a circle round the summit of the fruit-stalk, after flowering bent down. *Pedicles* slightly hairy, very short. WOODWARD. *Plant* sometimes quite free from hairs. *Blossom* dull yellow, with brownish streaks.

*Tufted Horse-shoe Vetch.* Meadows and pastures in a calcareous soil. Chalky grounds about Gogmagog Hills; and between Northfleet and Gravesend; Kent, Surrey, and Bedfordshire, Limestone rocks about Malham, Settle, Giggleswick, Kilnsay, and Wharf, Yorkshire. South side of Bredon Hill, Worcestershire, below the camp. NASH. [Swaffham, Norfolk. Mr. WOODWARD. On the edge of the precipice all along Shellwith Hill. Mr. JACKSON. On Wick Cliffs in great plenty, and on St. Vincent's Rocks. Mr. SWAYNE. On the high grounds North of Marlborough.] P. May—(Aug. E.)

**HEDYSARUM.** *Keel* broad and blunt on the outer part: *legumen* jointed, 1 seed in each joint.

Ono'brychis. H. Leaves winged; legumens with one seed, prickly; wings as long as the calyx; stem growing long.



*Dicks. h. s.*—*Kniph.* 8—*Jacq. austr.* 352—*E. bot.* 96—*Riv. tetr.* 2. *Onobrychis*—*J. B.* ii. 335. 2—*Ger.* 1063. 1—*Chus.* ii. 232. 2—*Dod.* 548. 2—*Lob. obs.* 527. 1, and *ic.* ii. 81. 1—*Ger. em.* 1243. 1—*Park.* 1082. 1.

*Stems* cylindrical, scored; at first trailing, but when in flower ascending. *Stipulae* in pairs, oval-spear-shaped, terminated by a long point, membranaceous at the edges, sometimes fringed with a few hairs. *Leaf-stalks* furrowed above, slightly hairy. *Leaflets* 8 to 10 pair, with an odd one, those of the lower leaves elliptical, of the upper spear-shaped, or strap-spear-shaped, all with projecting points at the end, the uppermost with the mid-rib beneath and edges fringed. *Fruit-stalks* long, slightly hairy. *Bunches* long, closely tiled upwards. *Flowers* numerous. *Floral-leaves* awl-shaped, longer than the pedicles. *Calyx* one fourth the length of the blossom. **WOODWARD.** *Calyx*, segments spear-shaped, hairy, the two upper distant, the lowermost the shortest. *Blossom* standard egg-shaped, with a little tooth in the notch at the end, red in the middle, with 8 or 10 deeper coloured lines, white at the edges, and mottled with red, the lines on the outside fainter, but more numerous; *wings* very small, not half the length of the calyx, spear-shaped, red and white; *keel* reddish, with deeper coloured lines. *Legumen* oblong, hairy.

*Saintfoin.* *Cock's-head.* Meadows and pastures, particularly in chalky soils. [Burnham, Norfolk. Mr. CROWE. Gogmagog Hills near Cambridge. Mr. WOODWARD. Wick Cliffs. Mr. SWAYNE. Wilts, and the higher grounds of Gloucestershire, frequent, both wild and cultivated.] P. June—July.\*

**ASTRA'GALUS.** *Caps.* generally 2-celled; bulging: the solitary filaments cylindrical.

(1) *Stems* trailing, leafy.

A. Stem prostrate; flowers in roundish heads; legumens hypoglo<sup>t</sup>tis, egg-shaped, compressed, hairy, grooved, the point reflected. *E. bot.*

*Dicks. h. s.*—*E. bot.* 274—*Ray* 12. 3—*Fl. dan.* 614.

*Flowers* 8 or 10, forming a roundish head like clover. *Legumen* egg-shaped, grooved, with a double point which is bent

\* This is cultivated like Clover for feeding cattle, and is particularly advantageous in dry hilly situations, and chalky soils.



back when ripe, covered with long, white, soft hairs. LINN. *Stems* weak, as many as six or upwards, towards the base lying close to the ground, the heads of flowers rise up at some distance from the root, as if without any leaves or stems belonging to them. *Leaflets* six to twelve pair, with an odd one, elliptical, or spear-shaped, hairy, especially on the upper side, opposite. *Leaf-stalks* hairy, furrowed. *Stipulæ* egg-spear-shaped, sitting, in pairs, fringed. *Fruit-stalks* mostly from near the ends of the branches, ascending, larger than the leaf-stalks, about as long as the leaves, hairy, hairs white towards the base, black above. *Flowers* 5 or 6, rarely more, in a close head, on short pedicles. *Floral-leaves* oval-spear-shaped, one to each pedicle. *Calyx* beset with black hairs; teeth short, nearly equal. *Blossom* bluish purple, sometimes white. MR. WOODWARD. M. AFZELIUS first satisfied me that what had been taken for the *A. arenarius* by Hudson, Lightfoot, and Relhan, was the *A. hypoglottis* of Linn. Mantiss. which information is since fully confirmed by specimens which I have received from Professor Thunberg.

*Purple Mountain Milkwort*, or *Cock's-head*. *A. danicus*. Fl. dan. RETZIUS, and Bot. Arr. ed. ii. Sandy and chalky meadows and pastures. Gogmagog Hills, Newmarket and Royston Heaths. About Hazlewood, Yorkshire; Pigburn Fields near Doncaster. Hills in the King's Park, Edinburgh; sands of Musselburgh; Hill of Moncrief near Perth; and York Cascade, at the Duke of Athol's seat at Blair. [Side of Bredon Hill, Worcestershire, near the camp. NASH.—About Thorp-Arch, Yorkshire. MR. WOOD.—Swaffham Heath, Norfolk. Hills near Dunstable. MR. WOODWARD. Coast of Angus-shire, plentifully. MR. BROWN.] P. June—July.

glycyphyl-  
los.

A. *Stems* prostrate; legumens nearly 3-cornered, bent like a bow; leaves longer than the fruit-stalks; leaflets oval.

*Dicks. h. s-E. bot.* 203—*Fl. dan.* 1108—*Riv. tetr.* 103. *Astragalus*—*Kniph.* 3—*Trag.* 599—*J. B.* ii. 330—*Clus.* ii. 233. 1—*Lob. obs.* 526. 1, and *ic.* ii. 80. 1—*Ger. em.* 1233. 2—*H. or.* ii. 9. 8.

*Stems* much branched, smooth. *Leaves* alternate. *Leaflets* usually five pairs, with an odd one, mostly opposite, sitting or on very short fruit-stalks, smooth, very entire. *Leaf-stalks* furrowed above. *Fruit-stalks* from the bosom of the leaves. *Flowers* greenish yellow, numerous, in a close bunch, on short pedicles. *Stipulæ* awl-shaped, one at the base of each pedicle. WOODWARD. *Leaves* longer than the fruit-stalks. *Leaflets* rather pointed,

slightly hairy underneath. *Floral-leaves* very slender, as long as the calyx. *Pollen* orange-coloured.

*Wild Liquorice. Liquorice Cock's-head, or Vetch.* Meadows, pastures, and ditch banks, especially in a calcareous soil. About Charlton, Kent. [In the ditch of Northampton Castle. Mr. WOOD.—Near Diss, Norfolk, and Coddensham, Suffolk; in Huntingdonshire. Mr. WOODWARD.—Baydales, Darlington. Mr. ROBSON.]—(On the shore beyond Newhaven, near Edinburgh. Dr. SMITH. E.)  
P. June—July.

(2) *Stalk bare, without a leafy stem.*

A. (Stemless; flower-stalk E.) upright, longer than the leaves; legumens awl-shaped, inflated, woolly, upright. *uralen'sis*.

*Jacq. ic. i.—E. bot. 466—Lightf. 17. at. p. 401—Hall. it. helv. 2. 1. in opusc. at p. 308. and stirp. 5. 3. at p. 155. and hist. 14. 3. at. 1. p. 195—Fl. dan. 1041, has yellow and purple flowers.*

*Leaves* winged. *Leaflets* 23 to 33, egg-shaped, pointed, sitting, sprinkled with small whitish hairs. *Leaf-stalks* with three imperfect angles. *Stalks* twice as long as the leaves, cylindrical, hollow, somewhat scored, roughish. *Spike* short, rather oblong. *Flowers* sitting. *Floral-leaves* spear-shaped, shorter than the calyx. *Calyx* egg-shaped, inflated; teeth short. *Blossom* purple, or violet blue. *Legumen* longer than the calyx; somewhat hairy. LINN. Whole *plant*, the blossoms excepted, covered with white soft hairs. *Leaf-stalk* surrounded at the base with spear-shaped withered scales. *Leaflets* oval, oval-spear-shaped, and spear-shaped, with an odd one. *Fruit-stalks* much thicker than the leaf-stalks, but little longer than the leaves. *Flowers* 8 or 10, crowded. *Floral-leaves*, the lowest longer, the rest shorter than the calyx. Mr. WOODWARD It is evident that specific character and additional description given by Linnæus to his *A. Uralensis*, do not apply well to Mr. Lightfoot's plant, in which the stalks are but little longer than the leaves, and the leaflets rarely exceed twenty in number. But it is equally clear that the figure of Haller, to which Linnæus refers, belongs to Lightfoot's Highland plant, so that whatever mistake exists about it, our botanists are not responsible.

*Hairy Cock's-head, or Mountain Milk-Vetch.* Mountainous and alpine pastures in Scotland. Cromarty, and at the Bay of Farr. Mr. ROBERTSON.—On Carn-dearg, one of the lower heads of Ben Squivlert id Glencream in upper Lorn, in a light sandy soil. Mr. STUART.—On the top of North Queen's Ferry-

hill, Fifeshire, but not so large as on Ben Lawers, where it was first observed by Mr. Don. Mr. BROWN.] P. July.

**TRIFO'LIUM.** *Flowers* mostly forming a head capsule or legumen scarcely longer than the calyx; not opening, but falling off entire.\*

1) MELILOTS. Capsules naked, 1-celled, containing several seeds.

ornithopodoides.

T. Capsules 8-seeded, mostly 3 together, twice as long as the calyx; stems declining.

Curt. 124—*Fl. dan.* 368—*E. bot.* 1047—*Ray.* 14. 1. at p. 332—*Pluk.* 68. 1.

Bunches egg-shaped. An intermediate plant between *Trifolium* and *Trigonella*. LINN. Stems prostrate, two to five inches long, disposed in a circular manner round the root. *Leaflets* 3, sitting, mostly inversely heart-shaped, sharply and distantly serrated. *Leaf-stalks* long, slender. *Stipule* spear-shaped, sharply pointed, large, in pairs at the base of the leaf-stalks. *Fruit-stalks* axillary, much shorter than the leaf-stalks. *Flowers* from one to four, but usually two on a fruit-stalk, parallel to each other. *Calyx* more than half the length of the blossom, pale green, with deeper lines, cloven half way down; segments nearly equal, awl-shaped, *Blossom* pale red. *Legumens* short, thick, terminated by a short point turned downwards, which gives them something of the appearance of a bird's claw. WOODWARD. (Specimens in the Linnæan Herbarium have leaves obscurely serrated. *Fl. Brit.* Root fibrous, furnished with small fleshy knobs, as in *Vicia lathyroides* and others of this class, apparently to resist accidental drought, during summer. *E. bot. E.*)

*Bird's-foot Trefoil.* Fine short dry sandy pastures and meadows, and amongst corn. Half a mile from Tadcaster towards Sherborn. Near Oxford. Tottlesbury, Essex, on sandy banks by the sea side. Tothill Fields, Westminster. Black-heath, near London. About Marazion and Penzance, Cornwall. Maitland Bridge, between Musselburgh and Edinburgh. [Moushold Heath, near Norwich. Mr. PITCHFORD.—(Black-heath. *E. bot.*—On Henllan Hill, near Garn, Denbighshire. Mr. GRIFFITH. *E.*) A. June—July.

\* The flowers of all the species, dried and powdered, may be made into bread, which, in times of scarcity, has preserved the inhabitants of Scotland from perishing. The leaves of each species fold up before rain. The *Papilio Cinzia*, and the *Phalena Fascelina*, live upon the different species.



T. Capsules in bunches, mostly 2-seeded, wrinkled, acute; officinale. stem upright.

Kniph. 7-*Fl. dan.* 934-*E. bot.* 1340-*Gmel.* iv. 7-*Sheldr.* 72, *Common Melilot-Ludw.* 113-*Dod.* 567. 2-*Lob. obs.* 501. 2, and *ic.* ii. 43. 2-*Ger. em.* 1205. 4-*Park.* 719. 1. 2-*Ger.* 1034. 3-*Riv. tetr.* 6, *Melilotus-Blackw.* 80-*Matth.* 1162-*Trag.* 591-*H. or.* ii. 16, row 2. 2-*Fuchs.* 749-*J. B.* ii. 370-*Ger.* 1034. 4-*Lonic.* i. 106. 1.

*Leaflets* of the lower-leaves oblong-wedge-shaped, those of the upper elliptical, sharply serrated, toothed. *Stipulae*, the lower with three or four awl-shaped teeth; the upper spear-shaped, entire. *Bunches* long. *Flowers* bent back, scattered. *Pedicles* short, hairy. *Floral-leaves* awl-shaped, small, one at the base of each pedicle. *Calyx* one third the length of the blossom, clefts extending half way down, segments nearly equal. *WOODWARD.* *Blossom* yellow. (*Stem* about two feet high, branched, furrowed, When dried, this plant exhales a fragrant odour like that of *Anthoxanthum.* E.)

*Melilot Trefoil. Common Melilot. King's Clover. Hart's Clover.* Cornfields, meadows, and ditch banks, in stiff soil. [Very common in Gloucestershire.] A. June—July.\*

(A variety bearing white blossoms has been observed by Mr. Winch growing on Willington Ballast, Durham; and on the Ballast Hills below Gateshead. E.)

(2) *Legumens covered; many-seeded.*

T. Heads like umbels; legumens 4-seeded; stem creeping. re'pens. ing.

*Curt.* 193-*Fl. dan.* 990-*E. bot.* 1769-*Michel.* 25. 3 and 4-*Riv. tetr.* 17, 2, *Trifolium repens-Vaill.* 22. 1-*Dod.* 565-*Lob. obs.* 493. 2, and *ic.* ii. 29. 1-*Ger. em.* 1185. 1-*Park.* 1110. 1-*J. B.* ii. 380. 3-*H. or.* ii. 12. row 1. 2.

*Stem* undivided, cylindrical, a span long. *Stipulae* circular, blunt, but with a sharp point. *Leaflets* circular, very blunt. *Fruit-stalks* very long. *Receptacle* strap-shaped, solid. *Chaff* egg-shaped, oblong, blunt. *Blossom* parallel. In the above respects it differs from the *T. hybridum.* LINN. *Stipulae* in pairs, oval-spear-shaped, lengthened out into an awn. *Leaflets* varying in shape, but generally oval and blunt, sharply serrated, with

\* This is more fragrant when dry than when green. A water distilled from the flowers possesses but little odour in itself, but improves the flavour of other substances. Horses are extremely fond of it; cows, goats, sheep, and swine eat it.



a strong mid-rib, and numerous branching ribs terminating in the serratures. *Leaf-stalks* and *fruit-stalks* long, upright, rising nearly at right angles from the stem. *Flowers* in a close head, upright, when shrivelling, bent downwards. *Pedicles* short. *Stipulae* small, awl-shaped, one to each pedicle. *Calyx* teeth nearly equal, the two upper rather longest, reddish. *Blossom* white. *Standard* oval. **WOODWARD.** *Leaflets* inversely heart-shaped, and egg-shaped. *Calyx* greenish white, with purple streaks. When the flowering is partly over, the heads assume a peculiar appearance, the florets diverging from the centre, spreading outwards and downwards like an umbrella.

*White Trefoil. Dutch Clover.* (The Shamrock of the Irish. E.) Meadows and pastures. **P. May—Sept.\***

Var. 2. *Bloodwort.* Leaves a deep purple. **St.**

Var. 3. *Proliferous.* Small heads of leaves growing out of the flowers. **St.**

Canal between Limeshouse and Bromley. **Curt.**—[Worcestershire. **St.**]

(Var. 4. *Trifolium repens hybridum.* **Huds.** *T. hybridum.* **With.** Ed. 3 and 4, but not of **LINNÆUS.** It is distinguished by its ascending and more branched stem.

Moist pastures near Peckham and Battersea. **Hudson.** E.)

### (3) *Calyxes woolly.*

subterra-  
neum.

**T.** Heads woolly; 3 or 4-flowered; a rigid tuft from the centre reflected upon, and inclosing the fruit.

**Curt.** 128—**E. bot.** 1048—**Rib. tetr.** 17. 2, *Trifolium subterraneum*—**Ray** 13. 2—**Burr.** 881—**H.** 624. 14. row 1. 5.

The white filaments, which put forth from the extremities of the fruit-stalks, resemble roots; but they do not penetrate the earth as supposed by Dillenius, but rise upwards, their ends expanding into little star-like points, and finally inclose the seed-vessels in a kind of prickly head. **Curt.** *Stems* numerous, prostrate, disposed in a circle round the root. *Stipulae* in pairs, oval-spear-shaped. *Leaf-stalks* long, downy. *Leaflets* sitting, inversely heart-shaped, blunt, obscurely serrated, downy, espe-

\*. Horses, cows, and goats eat it. Sheep are not fond of it. Swine refuse it. The leaves stand upright, against rain. **LINN.**—Wherever this plant abounds spontaneously, it is always considered as an indication of the goodness of the soil; and this is well known to farmers. The richness of meadows and pastures is naturally owing to their abounding principally with the Trefoils, and others, of the same class; with a due mixture of the more acceptable grasses. **POLTENET'S View**

cially underneath. *Fruit-stalks* from the bosom of the leaves, the lower shorter, the upper as long as the leaves, with three or four flowers. *Floral-leaves* none. *Calyx* cylindrical, cloven half way down; segments nearly equal, bristle-shaped, fringed with soft hairs. *Blossom* white; standard oval, claw long and narrow. Mr. WOODWARD. *Tube* of the blossom very long. There is something so singular in this plant, that its æconomy well merits a further enquiry. The strong horny stellated substance which grows from the extremity of the fruit-stalk, stretching its rays outwards and downwards, incloses and presses down the capsules to the ground.

*Subterraneus Trefoil.* Barren heaths and pastures in sandy or gravelly soil. About London, frequent. Gamlingay by the wind-mills, and near Whitewood, Cambridgeshire. Between Eltham and Deptford, Kent. [Bath Hills, near Bungay, Suffolk. Mr. WOODWARD.—Mangotsfield Common, near Bath. Mr. SWAYNE.—Salt marsh at Lymington, between the town and the salt pans.] A. May—Aug.

T. Heads sitting, hemispherical rigid; calyxes scored; glo'meratum. teeth expanded, equal.

Curt. 227—E. bot. 1063—Barr. 882—Pluk. 113. 5.

*Stem* drooping. *Calyx* with ten scores, naked, disposed in a beautiful manner, the stiff expanding segments filling up the interstices between the rest. LINN. *Stems* numerous, prostrate, four to seven inches long, scarce perceptibly downy. *Stipulæ* in pairs, oval-spear-shaped, taper-pointed, scored, smooth. *Leaf-stalks* furrowed above. *Leaves* alternate. *Leaflets* nearly sitting, obtusely oval, or oblong-wedge-shaped, smooth on both sides, strongly ribbed, the ribs terminating in pointed serratures scarcely distinguishable by the naked eye, in the youngest leaves only the mid-rib lengthened into a projecting point. *Heads* from the bosom of the leaves and terminating, with a pair of stipulæ similar to, but broader than those beneath. *Calyx* smooth, shorter than the blossom; teeth expanding, triangular, pointed but not rigid at the end. *Blossom* pale red. *Standard* spear-shaped, somewhat keeled. *Wings* and *keel* equal. Mr. WOODWARD.

*Round-headed Trefoil.* Sandy meadows, pastures, and moist heaths. Saxmundham, Suffolk. Blackheath and Greenhithe, Kent. Isle of Sheppey. About Norwich. [Bath Hills, near Bungay, Suffolk. Mr. WOODWARD.—Near Yarmouth. Mr. TURNER.—(Sunderland Ballast Hills. Mr. WEIGHELL.—Rocks about Garn, near Denbigh. Mr. GRIFFITH. E.) A. May—June.

sca'brum. T. Heads sessile, lateral, egg-shaped; segments of the calyx unequal, stiff, bowed back.

*Curt.-E. bot.* 903—*Barr.* 870—*Vaill.* 33. 1—*J. B.* ii. 378. 4—*H. ox.* ii. 13. 10.

*Stems* not much branched. *Leaflets* oval, thickish, somewhat scoloped at the edge. *Heads* from the bosoms of the leaves, hard, stiff, permanent. *Calyx* the outer teeth longer and stronger. *Blossom* whitish, slender, as long as the calyx. LINN. Whole plant woolly. *Stems* prostrate, four to seven inches long. *Stipulæ* oval-spear-shaped, terminated by an awn. scored with red lines. *Leaf-stalks* short. *Leaves* few. *Leaflets* oblong-wedge-shaped, sitting. *Heads* somewhat oval. *Calyx* scored, hairy; teeth triangular, the lowermost long, expanding, sharp, and giving the plant its roughness to the touch. *Blossom* but little longer than the calyx, whitish. WOODWARD. It is in its seedling state that the segments of the calyx are most remarkably reflected.

*Hard-knotted, or Rough Trefoil.* Chalky and sandy pastures. Chalk hills near the Thames between Northfleet and Gravesend. Near Chatham, and in the Isle of Sheppey. Newmarket; Gamlingay, Cambridgeshire. Bath Hills, near Bungay, Suffolk. Mr. WOODWARD.—Caister Common, near Norwich. Mr. CROWE.—Wick Cliffs. Mr. SWAYNE.—(Tide Mill Dam, Liverpool. Dr. BOSTOCK.—On Snettisham Beach, and in an old chalk pit near Wells, Norfolk. Dr. SMITH.—Bishop Wearmouth Paddock. Mr. WEIGHELL.—Hill of Denbigh Castle. Mr. DAWSON TURNER. *Bot. Guide.* E.)

A. May—June.

stria'tum T. Heads sitting, mostly lateral, egg-shaped; calyxes scored, rounded.

*Fl. dan.* 1171—*E. bot.* 1843—*Vaill.* 33. 2.

*Calyx* with ten scores, hairy all over on the outside. LINN. *Stems* from six to eighteen inches high, mostly upright, sometimes declining, but never prostrate. *Leaf-scales* in pairs, oval, with a point, scored, very downy. *Leaves* alternate, distant, the lower on long, the upper on short leaf-stalks, the uppermost sitting, or nearly so. *Leaflets* of the lower leaves oblong-wedge-shaped, of the upper spear-shaped, sitting, downy, on both sides, ribs not strongly marked, serratures barely distinguishable with a glass. *Heads* oval, woolly, sometimes on short fruit-stalks, some terminating, but mostly in pairs. *Calyx* just shorter than the blossom, scores almost hid by long soft hairs; teeth nearly equal, straight, awl-shaped, not stiff. *Blossom* pale red. *Standard* spear-shaped. *Wings* and *keel* equal. Mr.



WOODWARD. The ribs upon the *calyx*, and its rounded nearly globular shape when ripe, readily distinguish this species.

*Soft-knotted Trefoil.* Dry meadows and pastures. [Bath Hills, Bungay, Suffolk. Mr. WOODWARD.—Wick Cliffs. Mr. SWAYNE.] A. June.

T. Spikes extremely woolly, oval; teeth of the calyx arven'se. bristle-shaped, woolly, equal.

*Dicks. h. s.*—Curt.—E. bot. 944—Dod. 577. 1—Lob. obs. 498. 4, ic. and ii. 39. 1—Ger. em. 1193. 3—Park. 1107. 6—H. ox. ii. 13. 8—Fl. dan. 724—Riv. tetr. 15. *Lagopus*—Ger. 1023. 2—Barr. 901 and 902—Matth. 983—Euchs. 494—Trag. 595—Lonic. i. 106. 5—Bluckw. 450.

Blossom wings marked within with a blood-coloured spot. LINN. Blossom pale red, shorter than the calyx. Whole plant woolly. Stem upright, cylindrical, firm, much branched. *Stipulæ* in pairs, spear-shaped, scored with red veins, and ending in an awn. Leaf-stalks very short. Leaflets of the lower leaves elliptical, of the upper nearly strap-shaped, somewhat nicked at the end, the mid-rib lengthened into a short point. Calyx reddish, longer than the blossom, scored; teeth bristle-shaped, nearly equal, fringed with long hairs. Mr. WOODWARD. Blossom pale red. Spikes sometimes long and cylindrical. Calyx teeth a fine red; the hairs when much magnified appear rough and knotty.

*Hare's-foot Trefoil.* Sandy pastures and cornfields. [Wick Cliffs. Mr. SWAYNE.] A. July—Aug.

Mr. Dickenson observes that it is highly aromatic when dried, and that it long retains its odour.

Var. 2. *Dwarf, Ray*, 14, 2.

Root running deep. Stems trailing, one to three inches long. Fruit-stalks very short. Heads numerous, roundish. Blossoms white or pale flesh-coloured. DILL. in R. Syn.—Stems trailing. Leaflets rather elliptical, blunter and by no means so pointed as in Dillenius's figure. *Stipulæ* more woolly than in the preceding. Heads nearly round, not so large as in the figure. Mr. WOODWARD.

Sea coast. Brackelsham, Sussex. [Yarmouth Denes; Lowestoft, plentifully. Mr. WOODWARD.]

T. Spikes loose; blossom nearly regular; stipulæ awl-shaped, converging; stems zigzag, branched. AFZE-

LIUS.



*Jacq. austr.* 386. *E. bot.* 190. *Fl. dan.* 662.

Root cylindrical, slender, branching, tough, very long, brown, perennial, above with many heads, and somewhat shrubby. *Stems* several, simple, scored, cylindrical, or slightly compressed, half a foot to a foot high, zig-zag at almost all the joints, ascending, and but seldom truly upright, with a slight hairiness, and sometimes almost smooth. *Stipulæ* with a slight hairiness, especially at the edges, sometimes nearly smooth, spear-shaped, tapering both ways, approaching, scored, scarcely embracing the stem, with reddish lines below. *Leaf-stalks* cylindrical. *Leaves*, the two uppermost sitting. *Leaflets* spear-shaped, with minute serratures not visible to the naked eye, but perceptible to the finger passed downwards, often marked with indistinct white blotches, with a slight hairiness on both sides, and especially at the edge, sometimes nearly smooth; those of the lower leaves blunt and nicked at the end, those of the rest rather pointed. *Spike* roundish, pleasing to the eye and smell, nearly sitting, generally single, sometimes 2, slightly woolly. *Calyx* smooth with ten scores; teeth green, beset with scattered hairs, the lowermost equal in length to the tube of the blossom, the rest gradually shorter. JACQUIN. Differs from *T. pratense* as follows: *Leaves* longer, more strongly ribbed, smooth above, *Stipulæ* spear-shaped, green, not awned. HALLER. *Leaves* longer and narrower, and blossoms of a deeper colour than those of the cultivated Clover. RAY.

*Long-leaved, or Zig-zag Trefoil. Trifol. alpestre.* HUDS. ed. ii. LIGHTF. and RELHAN. *Trifol. flexuosum.* JACO. and Bot. arr. ed. ii. *T. medium.* Fl. Suec. Pastures and sides of hedges. RAY.—Sides of woods. JACQUIN.—Mountainous pastures. HUDSON.—At the foot of the Highland mountains in moist and shady places. LIGHTFOOT.—In Skirrit and other mountainous woods and pastures in the North, most plentifully. CURTIS.—[High pastures, usually among bushes, and in woods and ditch banks. Bath Hills, near Bungay, Suffolk. Mr. WOODWARD.—Grows commonly in hedges or in woods, seldom in the open ground. Plentifully in Shortwood, near Packlechurch, Gloucestershire. Mr. SWAYNE.] P. July.\*

pratense.

**T.** Spikes crowded; blossoms unequal: calyx with 4 of the teeth equal; stipulæ awned; stems ascending. ARZELIUS.

\* Cattle are not fond of it till it is touched by the frost. From the information of a farmer, to whom I pointed out the growing plant in flower. *ST.* This is not *Marle Grass*. The true *Marle Grass* of the shops is the native *T. pratense*. *Marle Grass* was first cultivated by a farmer Smith, (I believe) of Somersetshire. (see Mr. Billingsley's Agricultural Report for Somerset). A circumstance which particularly distinguishes the *Trifolium medium*, is its propagating itself by the root. Mr. SWAYNE.

*E. bot.* 1770. *Fuchs* 317. *Trag.* 386. *J. B.* ii. 374. *Ger.* 1017.

1. *Matth.* 835. *Riv. tetr.* 11. 1, *Trifolium-Blackw.* 20-

*Kniph.* 1. *Lonic.* 1. 104. *K.*

*radicem hanc habet yasm dnu evode ismery word*

*Spike* single, sitting between two opposite sitting leaves, the *stipulæ* of which are somewhat egg-shaped, dilated, membranaceous, skinny, with red veins, and form a kind of common calyx. *Calyx* of the fruit with five awns or bristles, the four uppermost very much expanding, but the fifth and lowermost upright.

*LINN.* Flowers upright, when out of blossom hanging down. *Leaflets* of the lower leaves roundish, those of the upper oval, slightly downy, dark blackish green, with a whitish angular mark in the centre. *Stipulæ* the upper oval, terminated by an awn, scored with red veins slightly woolly. *Head* single, usually roundish and sitting between a pair of nearly sitting leaves, and in part surrounded by their stipulæ, smaller, and of a deeper purple than those of *T. medium*. *Calyx* short, slightly woolly, generally scored with red veins, teeth bristle-shaped, woolly, usually tinged with purple. *Blossom* of one petal; tube long; standard usually longer than the wings and keel, blunt, generally notched at the end; wings blunt. *Blossom* reddish purple, sometimes white. *St.* *Stems* always bowed upwards at the base. *Branches* and leaves upright, not wide apart. *Calyx* lower tooth far shorter than the tube of the blossom. *ARZELIUS.*

*Purple Trefoil, or Clover. Marle grass. Honeysuckle Trefoil.* Meadows and pastures. (*P. Fl. Brit. E.*) B. May—Sept.\*

*Var. 2. Smaller.* Leaves inversely heart-shaped, the upper generally opposite. *Spike* bare. *RAY.*

*Ray* 13. 17

The English botanists have considered this as a smaller var. of *T. pratense*, the stipulæ being awned and the teeth of the calyx nearly equal, as in that species; but it differs in other respects very materially, the leaves being opposite, the leaflets small, short, inversely heart-shaped, the fruit-stalks very long and destitute of floral leaves. *Dr. ARZELIUS* in *Linn. fr. d.*

227. *Ray* 13. 17

Between Peckham and Camberwell. *HUDSON.*

*Var. 3. Cultivated.* Larger and more upright than 1. Leaves somewhat paler and thinner. Flowers somewhat paler. Does not propagate itself by seed, or continue so long in the ground.

*RAY.*

*Fl. Gan.* 1989

In a great scarcity of provisions, bread has been made of the flowers. The heads are used in Sweden to dye woolen green. With alum they give a light, with copperas a dark green.

Stems strong, almost smooth, furrowed, twice as tall as those of 1. Heads large, oval, hairy. Petals more expanding, and styles shorter than those of 1. MILL. Differs from 1. in nothing but size. Mr. WOODWARD, Sr. Mr. Swayne thinks it specifically different from the wild sort, whose heads are globular, but these are oval.

Broad Clover. Meadows and pastures.\*

Var. 4. Flowers cream-coloured.

A specimen of this rare plant was sent to me by the Rev. Mr. SWAYNE, accompanied by the following observations. "A var. of *Trifolium pratense* with a yellowish white flower, found in a field belonging to Tracy Park, near Bath. I am confident it is a var. of *Tr. pratense*, as it exactly resembled that species in every thing but colour, and was the only plant of that colour in the whole field; indeed the only one I have ever seen."

On comparing the specimens sent by Mr. Swayne with the *Tr. pratense*, and *Tr. ochroleucum*, I am persuaded that his opinion is perfectly right. The structure in all respects corresponds with the former, wanting the general hairiness, the long awns to the stipulæ, and the very long tooth of the calyx so striking in the latter.

ochroleu-  
cum,

T. Spikes woolly; stem upright, pubescent; lower leaflets inversely heart-shaped; lower tooth of the calyx as long as the tube of the blossom.

Dicks. h. s.—Curt.—E. bot. 1224.—Jacq. austr. 40.

Upper-leaves narrow, very entire. Spikes on fruit-stalks, oblong. Calyx the lowermost tooth the longest. Blossom brimstone-coloured. LINN. Stem more hairy, and the stipulæ sheathing to a greater extent, and running out into longer awns than in the *T. pratense*. GOUAN. Leaves alternate; leaflets sitting, the lower ones heart-shaped and egg-shaped in the same plant. Mr. WOODWARD. These circumstances, together with the great length of the lower tooth of the calyx, sufficiently distinguish it from the yellow-flowered var. of the *T. pratense*.

Ray's *Trifolium pratense hirsutum majus, flore albo-sulphureo*, (Syn. 328.) belongs to this species, as Mr. Hudson had determined, and not to the variety just mentioned.

\* Much cultivated. It is either grazed, or made into hay. Swine, goats, horses, and cows are fond of it. LINN.—Seldom remains in the ground more than two years. Mr. WOODWARD.



*Sulphur-coloured Trefoil.* Dry meadows and pastures, and thickets, in a chalky soil in Essex, Cambridgeshire, Bedfordshire, Hertfordshire, Dupper's Hill, Croydon, and near Stamford. [Bath Hills, near Bungay, Suffolk. Mr. WOODWARD.] (Sunderland Ballast Hills. Mr. WEICHEL. Clapham, Bedfordshire. Rev. Dr. ABBOT. P. Fl. Brit. E.) B. June—July.

(T. Spikes hairy, egg-shaped; stipulæ elliptical: calyx-stella'tum. teeth spreading, leafy, equal, taper-pointed; stems spreading; leaflets inversely heart-shaped, toothed.

E. bot.

E. bot. 1545—Barr. 860.

*Herb* varying much in luxuriance, always considerably hairy. *Stems* spreading, branched, clothed with soft horizontal hairs. *Leaflets* strongly ribbed. *Flowers* in round, or ovate heads. *Calyx* very hairy, furrowed; its orifice is surrounded with an elegant red and white circle when about half grown. *Standard* of the blossom red; the other petals pale red or white. E. bot.

*Starry-headed Trefoil:* the real *T. stellatum* of Linnæus, discovered by Mr. BORRER in July, 1804, growing in great plenty between Shoreham harbour, Sussex, and the sea.

A. July. E.)

T. Spikes hairy, globular; stipulæ spear-shaped, upright; marit'imum. calyx teeth spreading and dilated after flowering: leaflets inversely egg-spear-shaped; upper leaves opposite.

Dicks. h. s.—E. bot. 220—H. ox. ii. 14. upper left hand figure—Pluk. 113. 4.

(*Stems* numerous, spreading, often decumbent, about a foot long, branched, cylindrical, scored, slightly hairy. Fl. Brit. E.) *Calyx* hairy on the outside, teeth equal. LINN. *Stem* woolly, with a few hairs. *Stipulæ* in pairs, spear-shaped, lengthened out, scored, fringed with long hairs. *Leaves*, the upper opposite; leaflets of the lower-leaves oblong-wedge-shaped, of the upper oblong-wedge-spear-shaped. *Leaf-stalks* short. *Fruit-stalks* longer than the leaf-stalk. *Heads* oval. *Calyx* as long as the blossom; divided almost to the base; segments spear-awl-shaped, fringed with long hairs. *Blossom* pale reddish purple; *standard* spear-shaped, keeled; *wings* hooked very near the base; *keel* as long as the wings. Mr. WOODWARD.



*Teasel-headed Trefoil. Tr. stellatum.* Huds. ed. ii. and Bot. Arr. but not *Tr. stellatum* of Linn. Common on the Southern sea Coast. Dartford Saltmarsh. Leigh and Little Holland, Essex. In Somersetshire. Tilbury Fort. Sheerness Between Greenhithe and Northfleet. [In the meadows by the river side between the Hotwells and Bristol. Mr. SWAYNE. Norfolk. Mr. PITCHFORD.] (Willington Ballast, Durham. Mr. WINCH. Sunderland Ballast Hills. Mr. WEIGHELL. Bot. Guide. E.) A. June—July.

(4) **BLADDER TREFOILS.** *Calyxes inflated and belying.*

*fragiferum.* T. Heads roundish; calyx of the fruit reflected; upper lip 2-toothed, inflated; stems creeping.

*Dicks. h. s.—Curr.—E. bot. 1050—Fl. dan. 1042—Vahl. 22. 2 J. B. ii. 379. 3. v. H. ex. ii. 13. 14—Clus. cur. 39. Ger. em. 1208—Park. 1109. 6.*

*Stems throwing out roots. Fruit-stalks longer than the leaves. Calyx a little downy, nearly globular, woolly, (the upper part) with two teeth, the lower at the base with three teeth. Blossom white with us, but in other countries reddish. Linn. Blossom purple. CURTIS. Stipules in pairs, oval-spear-shaped, drawn out into a long point, smooth. Leaflets heart or egg-shaped, smooth, very slightly serrated. Fruit-stalks naked, longer than the leaf-stalks. Mr. WOODWARD. (The habit of *T. repens*. Legumen at the bottom of the calyx, two-seeded. Fl. Brit. E.)*

*Strawberry-headed Trefoil.* Moist meadows. About London, frequent. [Moist places near the sea in the county of Durham. Mr. ROBSON.] (North shore, Liverpool. Dr. Bosrock. E.) P. July—Aug.\*

(5) **HOP TREFOILS.** *Standard of the blossom bent inwards, permanent.*

*procumbens.* T. (Heads oval, imbricated; standard deflexed, permanent, furrowed; stems procumbent; leaflets obovate. E. bot. E.)

\* (This Trefoil is eaten by cattle, but is not recommended for culture, its produce being late and not considerable. E. bot. E.)

*E. bot.* 945—*Curt.* 161; *T. agrarium*—*Vaill.* 22. 3—*Riv. tetr.* 10. 1, *T. lupulinum*—*Fl. dan.* 796—*Walc.—J. B.* iii 188 1—*H. ex. in.* 13. 1. and 2, the uppermost of the 2 figures. *Tilbury Fortness* in *Somersetshire*. *Essex* in *Somersetshire*.

(*Legumen* with one seed, *Fl. Brit. E.*) Differs from the *T. agrarium* in having smaller flowers, and its long stems entirely drooping. Similar to *T. filiforme*, but larger, and has often ten to twelve flowers in a head. Leaves not scored. When sown two proves distinct. LINN. Stems much branched, slightly downy. *Stipulae* in pairs, oval-spear-shaped, not ending in an awn. Leaf-stalks short. Leaves alternate; leaflets egg-shaped, or obtusely oval; smooth, slightly serrated, the terminating one on a pedicle, one to one and a half line long, the side ones nearly sitting. Fruit-stalks numerous, from the bottom of the leaves, solitary, longer than the leaf-stalk. Flowers upright, yellow, after flowering turning brown, and bent back. Pedicles short. Floral-leaves minute, awl-shaped, one at the base of each pedicle. Blossom standard egg-shaped, scored, flat. Mr. WOODWARD. Leaves with about ten or twelve semi-transparent lateral ribs.

The plant considered by the English Botanists as the *Trifolium agrarium*, is the *Tr. procumbens* of Linnæus, but all the synonyms given by Linnæus to the *T. agrarium* belong to the *T. procumbens*, except that of *Dodonæus*, which is the *Medicago lupulina*. The *Trifolium procumbens* of English authors is considered by Linnæus only as a variety of the *Tr. filiforme*. Mr. AFZELIUS.

*Hop Trefoil.* Dry meadows and pastures. *A. June—July.*

*T. Spikes* oval, loosely tiled, few-flowered; stems trail-filiforme.

*E. bot.* 1257—*Ray.* 14. 4.

Differs from *T. procumbens* as follows: When wild scarcely a span high. Branches trailing. Fruit-stalks hardly thicker than horse-hair. Flowers three or five in a head, but when cultivated often twelve to fifteen, distinct, on more obvious pedicles. In the *T. procumbens* the fruit-stalks are as thick as a thread, not to mention the difference of the leaves and habit. Stems thread-like. Leaflets notched at the end, scored. Fruit-stalks longer than the leaves. Flowers bent down. Pedicles of the fruit clear and distinct. LINN. Seed one. LEERS. Stems three to six inches long. *Stipulae* in pairs, oval-spear-shaped. Leaf-stalks

very short. *Leaflets* mostly heart-wedge-shaped, very entire at the base, serrated upwards, strongly veined, smooth, nearly sitting. *Fruit-stalks* from the bosom of the leaves smooth. *Flowers* when wild mostly three, seldom more than five. *Pedicles* extremely slender, from half to one line long. *Floral-leaves* awl-shaped, very minute, one at the base of the pedicle of the middle flower, none on the others. *Calyx* half as long as the blossom, with five scores; the two upper teeth shortest; the lower longer, the lowermost the longest. *Blossom* pale yellow; *standard* egg-shaped, somewhat nicked, keeled. Mr. Woodward.

*Slender Yellow Hop Trefoil.* Poor Sandy heaths and pastures. [Salt Marsh at Lymington.] A. May—July.

Var. 2. *Lesser Hop Trefoil.* Spikes from eight to twenty flowered.

Curt. 307; *Tr. procumbens*—E. bot. 1256—Ray 14. 3. at p. 332—H. ox ii. 13. 1 and 2. b, the lowermost of the 2 figures—Lob. obs. 468. 1, and ic. ii. 29. 2—Ger. em. 1186. 6—Park. 1111. 5.

*Stems* numerous, six to twelve inches long, much branched. *Stipulae* in pairs, obtusely oval-spear-shaped. *Leaf-stalks* short. *Leaflets* heart-wedge or egg-shaped, very entire towards the base, serrated upwards, the odd one on a short leaf-stalk, the side one nearly sitting, smooth. *Fruit-stalks* from the bosom of the leaves, longer than the leaf-stalks, slightly downy. *Pedicles* very short. *Floral-leaves* none. *Flowers* after flowering bent back, hanging more loosely and separate than those of *T. procumbens*. *Calyx* larger in proportion to the blossom than that of *T. procumbens*, the two upper teeth short, the lower longer and more pointed. *Standard* egg-shaped, pointed. Mr. Woodward. *Stem* a little hairy. *Leaflets* inversely heart-shaped, mid-rib a little hairy underneath, with about seven semi-transparent lateral ribs. *Flowers* yellow; loosely tiled. This is the most common sort of *Hop Trefoil*, and may be found in almost every dry sandy or gravelly pasture, especially where the turf is fine, but varying greatly in size according to the richness or poverty of the soil, and flowering from May to August. (This plant is the *T. filiforme*  $\beta$  of *Fl. Brit.* and HULL, which the Rev. Dr. Beeke has of late attempted specifically to distinguish under the name of *T. minus*. Dr. Smith in the English Botany, and Mr. Relhan in his *Flora Cantabrigiensis* have followed this distinction, but on considering that the plants frequently grow intermixed, are very similar in general habit, and vary greatly in size, we cannot hastily adopt this arrangement. E.)



T. Without stem or stalk; flowers nearly sitting on the suffoca'tum.  
root.

*E. bot.* 1049—*Jacq. hort.* 60.

Flowers in clusters, sitting; axillary, as it were buried in the earth. *Calyx* oblong, compressed, smooth, five-cleft, segments bent back. *Blossom* within the tube of the calyx, colourless. *Leaves* in threes, inversely egg-shaped, smooth, somewhat toothed. LINN. *Stipulae* cloven, bristle-shaped. *Legumen* two-seeded; not longer than the calyx. JACQUIN. Every part of the plant, except the leaves, is buried in the sand. It has been overlooked on this account, nothing but leaves being visible, nobody thought of pulling them up for examination, but on putting down a knife or a stick the whole plant may be raised, and then it flowers and fruit come into view. The clusters in some of the older plants are as large as a small nut. Mr. WOODWARD.

*Suffocated Trefoil.* First discovered in England by Mr. Wigg, on the driest sandy part of Yarmouth Denes, near the sea, (and also found at Lowestoft, Suffolk, and other places on the Eastern Coast by Mr. WOODWARD. Plentiful on the Den at Teignmouth. Rev. Dr. Beeke, in *Bot. Guide*, E.)

A. June—Sept.

LOTUS. *Calyx* tubular: wings converging lengthwise and upwards: *legumens* straight, generally with cells.

L. Heads of the flowers flatted at the top; stems her-cornicula'tus. baceous, trailing; *legumens* cylindrical, expanding.

*E. bot.* 2090—*Fl. dan.* 991—*Curt.* 107—*Kniph.* 7—*Ger.* 1022. 6—

*J. B.* ii. 355—*Walc.*—*Dod.* 573. 2—*Lob. obs.* 501. 2, and

*ic.* ii. 44. 1—*Ger. em.* 1190. 5—*H. ox.* ii. 18. 10—*Anderson,*

*Astragalus glycyphylus*—*Fuchs.* 527—*Trag.* 594—*Lo-*

*nic.* ii. 106. 3.

*Blossom* sweet-scented. LINN. *Seeds* more than twenty.

CURTIS. *Calyx* in this and all the varieties fringed with long soft hairs. *Petals* all equal, on narrow separate claws. *Legumen* smooth, terminated by a long straight point. WOODWARD.

*Heads* with a single sitting leaf at the base. Mr. HOLLEFEAR.



*Flowers* numerous, in flattened heads; a sort of umbel with very short spokes. *Blossom* before opening of a bloody red, on the outside, and of a yellowish green within, when expanded of a full yellow; *standard* bent back; *wings* oblong-egg-shaped. (*Root* woody; *seeds* kidney-shaped. E.)

*Birds-foot. Clover.* Meadows, pastures, heaths, road sides. P. June—Aug.

Var. 2. LINN. Larger: stem more upright.

*Riv. tetr.* 76. 1, *Lotus*.—J. B. ii, 356. 1.

*Leaves*, and especially the unexpanded heads, with a good deal of woolliness, RAY. Stem upright, two feet high, hardly angular. *Leaves* veined underneath. LYONS. *Stipule* bluntly egg-shaped, or roundish, but terminating in a point. Mr. WOODWARD. (This variety we apprehend to be the plant represented in *E. bot.* t. 2091, and there designed a new species, viz. *L. major*. E.)

*Loti corniculatæ major species.* R. Syn. 334. (St.) *L. corniculatus* γ and δ. *Fl. Brit.* Woods, moist meadows and hedges, [and sides of wet ditches. St.] P. June—Aug.

Var. 3. *temuissimus.* LINN. Should seem to be a variety. Stems twice as long and narrow as those of 1. *Leaves* strap-shaped. Legumen narrower. LINN. More shrubby. RAY. *Stipulæ* strap-spear-shaped. Mr. WOODWARD.

*Lotus foliis longioribus et angustioribus.* HALL. 385 § II. (St.) Cornfields and moist places, RAY.—In the neighbourhood of Worcester. St.

Var. 4. Like 2. but less hairy. RAY. Whole plant downy. Mr. WOODWARD.

*Lotus pentaphyllos medius pilosus.* R. Syn. 334. (St.) In the fields behind Mother-huff's. RAY.

Var. 5. *Leaves* hoary underneath.

Chalk pits at Greenhithe. RAY.

Var. 6. smooth. Plant entirely hairless; *stipulæ* half-egg-shaped; filaments club-shaped.

The flowers become greenish when dried; in which respect they resemble the flowers of the plants which produce Indigo. Cows, goats, and horses eat it. Sheep and swine are not fond of it. *Thrips Physapus* is found upon it. LINN. In Hertfordshire it is cultivated as pasturage for sheep. *Bot. arr. ed.* 1.—It is strongly recommended by Dr. Anderson, (both for fodder and hay under the name of *Milk-vetch*. E.)—There is no doubt but it might be cultivated to great advantage. In moist meadows it grows to a great height, and much higher than any of the *Trefoils* or *Medicago lupulina*, and makes extremely good hay. Mr. WOODWARD.

High grounds North of Marlborough. June.  
The common trailing sort, and the upright, which grows in woods, ought, I think, to be specifically distinguished. The Legumens of the former grow gradually larger, those of the latter more taper towards the end. The seeds of the former (which are generally much devoured by the larvæ of some insect,) are considerably larger than those of the other. Mr. SWAYNE.

(L. Peduncle one-flowered; stem much branched, prostrate; diffus. leaves and calyx hairy; legumens cylindrical, very slender, linear. E. bot. 925.

Less than the preceding. Stems tinged with red, hairy. Leaflets hairy on both sides. Peduncles rarely two flowered, varying in length. Flowers deep yellow. Calyx extremely hairy. Legumen six times the length of the calyx, brown, smooth, many-seeded, divided into cells. Seeds globular.—This plant differs from *Lotus angustissimus* of Linna (Bauh. Hist. v. 356. f. 2.) in the pods being twice as long and slender, the leaves hairy, and the blossoms of a deeper colour. Fl. Brit. Slender Bird's-foot-Trefoil. *Lotus diffusus*. SOLEND. in Herb. Banks. *L. pentaphyllos minor hirsutus, siliqua angustissima*. BAUGH. pin. 332. SAUVAGES, in Herb. Linn. *T. corniculatum minus pilosum*. BAUGH. prod. 141. At Kings-teignton and Bishop-teignton, Devon. Rev. Dr. BEEKE. Fl. Brit. In low meadows a mile beyond the Hot Wells near Bristol. Sir T. G. CULLUM. Bot. Guide. Among the rocks near Hastings Castle. Mr. DICKSON. Sands near Penzance. Mr. W. ALLEN, in Bot. Guide. P. May—June. E.)

MEDICA'GO. Pistil bent, pressing down the keel and springing out of it with a jerk: S. Vess. a legumen, compressed, bent, or twisted spirally.

M. Flowers in bunches; legumens narrow, regular, twist-sativa. ed, stem upright, smooth.

*Kniph.* 8—*E. bot.* 1749—*Clus.* ii. 242. 2—*Lob. obs.* 498. 1, and  
*ic.* ii. 36. 2—*Ger. em.* 1189. 2—*Park.* 1114. 1—*H. ox.* ii. 16.  
 row 1, 2—and ii. 15. row 3. II.—*J. B.* ii. 378. 1.

*Stems* scored, declining. *Branches* alternate. *Stipulæ* spear-shaped, ending in an awn. *Leaf-stalks* short. *Leaflets* three together, elliptical, entire at the base, serrated upwards, the mid-rib lengthened into a thorn-like point, slightly downy above, smooth, and scored with veins underneath, on leaf-stalks, that of the terminating one the longest. *Fruit-stalks* from the bosom of the leaves, longer than the leaves. *Bunches* thick. *Pedicles* short. *Floral-leaves* awl-shaped, one at the base of each pedicle. *Calyx* nearly smooth; teeth awl-shaped, nearly equal. *Blossom* purple. *Legumen* twisted spirally with two or three distant turns. WOODWARD. (*Root* rather woody. *Stems* two or three feet high.)

Dr. Smith seems to suspect this plant may prove to be only a variety of the following species. E.)

*Lucerne. Purple Medick.* Meadows, pastures and ditch banks.  
 P. June—July.\*

*falcata*,

M. Flowers in bunches; legumens crescent-shaped; stem prostrate.

*E. bot.* 1016—*Fl. dan.* 233—*Kniph.* 11—*Riv. tetr.* 84—*Falcata*;  
 —*H. ox.* ii. 16. row 1. 1, and ii. 15. row 3. 1—*Clus.* ii. 243.  
 1—*Ger. em.* 1191. 8—*Park.* 1114. 3—*J. B.* ii. 383. 2.

*Stems* cylindrical, smooth, slightly scored, declining. *Stipulæ* in pairs, spear-shaped, almost all at the base, and some

\* Modern writers upon husbandry strongly recommend the cultivation of this plant, for the purpose of feeding cattle, but it is not yet generally adopted, though in the neighbourhood of London, its merit seems to be well understood. It requires a deep rich soil, and, in such, will continue to flourish many years, if kept free from weeds. One pound of *Lucerne* seed contains about 150,000 seeds, so that supposing only one seed in three to vegetate and to survive accidents, one pound would produce 50,000 plants. (Millar adduces various interesting facts relative to its utility, and we have ascertained that half an acre of *Lucerne*, the rows eighteen inches asunder, and the plants nine inches apart, will support a pair of carriage-horses (cut and brought to them in the stable,) without any corn or hay, in good working condition, for twenty weeks, that is from June to October inclusive, and they prefer it to any other kind of food. It should be given cautiously at first, as it then proves a powerful diuretic; and too great abundance will in some horses occasion the staggers. Pigs devour it greedily, and cows fatten on it. Dr. Turner, who published a herbal about the year 1550, is the earliest English author who relates the utility of this plant, and his information was chiefly derived from the Roman Naturalists, though it has been conjectured that he first introduced the cultivation of *Lucerne*, or as he calls it; *Horned Clover*, into England. E.)



almost at the top of the branches, with one or two teeth on the outer edge. *Leaf-stalks* short. *Leaves* smooth, three together. *Leaflets* elliptical or wedge-shaped, entire at the base, serrated upwards, mostly notched at the end, the mid-rib lengthened out into a projecting thorn-like point. *Fruit-stalks* longer than the leaves. *Bunches* rather loose. *Floral-leaves* awl-shaped. *Calyx* slightly downy; teeth awl-shaped, equal. *Blossom* yellow or purple. *Legumen* crescent-shaped, terminated by a long claw. *Seeds* 5 or 6, compressed, fixed to the inner suture. **WOODWARD.**

*Yellow Medick. Butter-jags.* Balks of cornfields, and sandy pastures. Between Watford and Bushy-Hill. **RAY.**—About Norwich, plentifully. **Mr. ROSE, Mr. WOODWARD;** (and **Bury. Dr. SMITH.**—Dunwich old Church Yard, profusely; and hedge side from Sudborn to Oxford. **Rev. G. CRABBE**—Willington Ballast Hills, Durham. **Mr. WINCH. Bot. Guide.**—Not unfrequent in Cambridgeshire, with purple flowers, this species is found near Port Eynon, Glamorganshire, by **Mr. E. FORSTER,** Jun.—Fields at Bradwell and Burgh Castle, Suffolk; also on Yarmouth Denes. **Mr. WIGG. E.)** P. July.\*

**M.** Spikes oval; seed-vessels kidney-shaped, with 1 cell lupulina, and 1 seed; stems trailing.

*E. bot.* 971—*Fl. dan.* 992—*Curt.* 120—*Kniph.* 11—*Riv. tetr.* 8, *Melilotus minima*—*H. ox.* ii. 15. row 4. *f.*—*Fuchs.* 819—*Trag.* 593—*J. B.* ii. 380. 4—*Dod.* 576. 2—*Ger. em.* 1186. 5—*Park.* 1105. 6—*H. ox.* ii. 16. 8—*Ger.* 1020. 2—*Lonic.* i. 106. 4.

*Legumens* scored, wrinkled, somewhat rough with stiff hairs. **LINN.** *Stems*, unless supported by other plants, trailing. *Branches* very numerous, alternate. *Stipulae* oval-spear-shaped, with a long awn. *Leaves* on very short leaf-stalks. *Leaflets* three together, oblong-wedge-shaped, serrated upwards, nicked at the end, with the mid-rib lengthened into a projecting point. *Head* oval. *Flowers* small. *Calyx* slightly downy, nearly as long as the blossom; teeth awl-shaped, the two upper ones rather shorter. *Blossom* yellow. *Legumen* turning black when ripe. **WOODWARD.** *Stem* a little triangular, *Flowers* 30 to 40, and upwards.

\* In hot, dry, barren sandy places it is well worth the trouble of sowing for the purpose of making hay. A practice long since adopted in some parts of Sweden. Cows, horses, goats, and sheep eat it.



*Trefoil Medick. Melilot Trefoil.* Cornfields, meadows and pastures. A. May—Aug.\*

Var. 2. Legumens about 10, slightly compressed, rough with numerous tubercles. RAY.

H. ox. ii. 15. 4.

*Medica polycarpus fructu minore compresso scabro.* R. Syn. 333.—*Medica cochleata*, &c. H. ox. ib.—The rest of the synonyms in the Fl. Angl. belong to 1. Str.

Cornfields near Peckham, Paddington, and behind Pindar's end, near Enfield. RAY.

Var. 3. Legumes smooth; not set with stiff hairs.

This new variety was discovered, and communicated by Mr. ROBSON.

(polymorpha. M. Legumens spirally wreathed; stipulæ toothed; stem spreading.

Curt.—E. bot. 1616.

Root fibrous, bearing tubercles. Stems prostrate. Leaflets toothed. Stipulæ in each variety more or less toothed. Peduncles axillary, with 2 or 3 flowers. Blossoms yellow. Legumens roundish, with many twistings, prickly, many seeded. Seeds kidney-shaped, flattened, perfectly smooth, Fl. Brit.

*Snail-shell Medick. Hart Trefoil, or Claver.* Dry sandy pastures, especially on the sea shore. A. May—June.

Var. 1. Leaflets inversely heart-shaped, smooth, marked above with a blackish brown heart-shaped spot. Fruit with widely diverging thorns. Legumens flat at the base, narrowing towards the top; wreathes flat; prickles expanding, nearly straight. Blossom standard notched at the end, much larger than the other petals.

Curt. 176—Cam. hort. 27—Ger. 1021. 4—Ger. em. 1190. 4—Park. 1115. 6—H. ox. ii. 15. row 2. 12—Mart. Fl. Rust. t. 76.

*Medicago polymorpha arabica.* LINN. HUDS. RELH. M. arabica. CURT. WITH. Ed. 3 and 4. SYM. Syn. HULL. M. ma-

\* Cows, horses, goats, and sheep eat it; but it is less grateful to them than the other species. LINN. It is cultivated in Norfolk under the name of *Nonsuch*, and is usually sown mixed with Rye-grass (*Lolium perenne*.) The crop is then called black and white Nonsuch. Mr. WOODWARD. In the Isle of Wight I have seen it sown along with clover and rye-grass.

*culata*. SIBTH. *M. polymorpha*.  $\alpha$ . Fl. Brit. Wells in Norfolk. Mr. CROWE. Meadows near the Hotwells, Bristol. Mr. SWAYNE. Sand-pits at Charlton, Kent. HUDSON. West of Bridport, plentiful.

Var. 2. Leaflets inversely egg-shaped, covered with white silky down. Prickles of the legumens stiffly hooked. Blossom small, pale yellow. E.)

*H. ox.* ii. 15, row 2. 15-*J. B.* ii. 386. *b.-Riv. tetr.* 88, *Cochleata*, row 4. *f.* 4, *ech. min.*-*J. B.* ii. 386. 2. *a.-Park.* 1115. 7. *a.-Fl. dan.* 211.

(*Medicago polymorpha minima*. LINN. Fl. dan. *M. echinata minima*. RAY. BAUH. *M. minima*. WITH. Ed. 3 and 4. HULL. *M. polymorpha*  $\beta$ . Fl. Brit. Sandy places, especially on the sea coast, but rather rare. At Narborough, near Swaffham. Mr. WOODWARD. Chippenhams Gravel-pit. RELHAN.

Var. 3. Leaflets inversely egg-shaped, hairy; prickles of the fruit very short, depressed, not rigid.

*Pluk.* 113. 6-*H. ox.* ii. 15. 11.

*M. polymorpha muricata*. LINN. *M. muricata*. WITH. Ed. 3 and 4. HULL. *M. muricata*  $\gamma$ . Fl. Brit. E.) At Orford in Suffolk on the sea bank, close by the sea, plentifully. RAY.

## CLASS XVIII.

# POLYADELPHIA.

## POLYANDRIA.

**HYPERICUM.** *Cal.* with 5 divisions; beneath: *Bloss.* 5 petals: *Styles* 1, 3 or 5: *Capsules* 1, 3 to 5-celled.

## POLYANDRIA.

**HYPERICUM.** *Cal.* with 5 divisions: *petals* 5: *filaments* numerous, united at the base into 3 or 5 sets: *capsule* with 3 or 5 cells, and many seeds.

(1) *Styles* 3: *Stems* shrub-like.

**Androsæ-**  
**mum.**

**H.** Fruit like a berry: stem 2-edged.

*Curt.* 265-*E. bot.* 1225-*Dod.* 78. 2-*Loh.* obs. 357. 3, and *ic.* i. 632. 1-*Ger. em.* 543. 1-*Park.* 576. 1-*Blackw.* 94-*Ger.* 435-*H. or.* v. 6. 12.

*Leaves* opposite, sitting, smooth, entire, egg-shaped; at the base of the branches very large, those of the branches decreasing in size as they approach the summit, and approaching to spear-shaped. *Calyx* segments unequal. *Berries* black when ripe. **MR. WOODWARD.** *Flowers* terminating, four together. *Fruit-stalks* cylindrical, smooth. *Calyx* the outer segments much larger. *Petals* yellow, concave, scored, unequal at the end from a hollow in the margin on one side. (*Root* woody. *E.*)

*Tutsan.* *Park-leaves.* Woods and moist hedges. Woods at Wick Cliffs. **MR. SWAYNE.** Near Pengwarry, Cornwall, in ditches. **MR. WATT.** Duke of Bridgewater's woods at Askeridge, and near Berkhamsted, Hertfordshire; (also at Field Dalling, Norfolk. *E.*) **MR. WOODWARD.** Lanes at the foot of Malvern Hill, Worcestershire. **ST.** Rocky woods in Westmoreland, frequent. **MR. GOUGH.** In a deep holloway in a marly soil, between Worcester and Tewkesbury. (Toxteth Park, near Liverpool. **DR. BOSTOCK.** Frequent in Norfolk, as at North Walsham, Costesey, and other places. **DR. SMITH.** By the side of the great road near Cwm Delhi, at the foot of Snowdon, leading from Capel Curig to Beddgelert, Caernarvonshire. *E.*)

*P.* July—Sept.

(2) *Styles* 3: *Stems* herbaceous.

**quadran-**  
**gulum.** **H.** *Leaves* egg-shaped, with pellucid dots; stem 4-cornered.



*Curt.* 231-*E. bot.* 370-*Fl. dan.* 640-*Trag.* 73. 2-*Matth.* 937  
 -*Dod.* 78. 1-*Lob. obs.* 216, and *ic.* 399. 1-*Ger. em.* 542-  
*Park.* 575-*Ger.* 434-*H. ox.* v. 6. 10-*Pet.* 60. 11.

*Stem* reddish, smooth. *Branches* opposite. *Lower leaves* sitting, opposite; the upper growing together, egg-shaped, with 7 or 9 ribs, with a net-work of veins, with transparent glands in the interstices, though not very numerous; discernible when viewed with glass in a strong light. *Floral-leaves* awl-shaped, in pairs. *Mr. WOODWARD.* *Stem* branched; edges membranaceous, marked with short dark purple glandular streaks. *Leaves* in pairs, sitting, oblong-egg-shaped, ribbed, dotted along the edges with black glands, particularly on the under side. *Calyx*, segments ribbed, rather expanding, a little toothed at the end. *Petals* yellow, ribbed, concave, generally marked with dark purple lines and dots, filled with a purple liquor, which stains paper with a muddy purple permanent stain. *Anthers* with a small black gland. *Styles* yellow. *Summits* purple.

*Square St. John's Wort. St. Peter's Wort.* Moist hedges and shady places. [Bogs in Cornwall. *Mr. WATT.* Wick Cliffs. *Mr. SWAYNE.* About Manchester. *Mr. CALEY.*] (*Dickenson's Dingle*, near Liverpool. *Dr. BOSTOCK.* At Mottershall, near Stone, Staffordshire. E.) P. July—(Aug. E.)

H. *Stem* 2-edged; leaves blunt, with pellucid dots.

peforatum.

*Ludw.* 11-*Curt.-E. bot.* 295-*Mill. ill.-Blackw.* 15-*Woodv. p.* 29-*Fl. dan.* 1043-*Kniph.* 3-*Dod.* 76. 1-*Lob. obs.* 216. 1, and *ic.* i. 398. 1-*Ger. em.* 539. 1-*Park.* 573. 1-*Pet.* 60. 5-*Matth.* 936-*Ger.* 432. 1-*Fuchs.* 831-*Trag.* 72. 1-*H. ox.* v. 6. 1.

Whole plant quite free from hairs. *Stems* upright, (two feet high, E.) nearly cylindrical, the edges running from the base of the leaves to the bottom of the knot below, beset above with small black dots. *Leaves* in cross pairs, oblong, rounded at the end, with 7, and sometimes 5, semi-transparent lines, with several black dots near the edges on the under side; the semi-transparent dots numerous. *Fruit-stalks* from the bosom of the upper leaves. *Calyx*, segments spear-shaped, ending in a taper point. *Petals* ribbed, set near the edges with dark purple glands, one of the sides very entire at the edge, the other serrated. *Stamens* 30 or more. *Anthers* with a globular black gland at the top between the lobes. *Germen* egg-shaped. *Styles* thread-shaped, yellow. *Summits* sometimes crimson.



*Common, or Perforated St. John's Wort.* Thickets, woods, hedges, dry banks. [Wick Cliffs. Mr. SWAYNE.]

P. July—(Aug. E.)\*

du'bium.

H. Stem imperfectly 4-edged; leaves blunt, without pellucid dots; calyx leaves elliptical. E. bot.

E. bot. 296.

Stems several, two to three feet high; upright, imperfectly 4-cornered; sprinkled with black dots. Leaves large, embracing the stem, egg-shaped, very thin and skin-like at the edge, with black dots underneath. Calyx leaflets very blunt, yellow green, marked with short black lines. Petals large, very entire, yellow, with black lines above and a few black spots underneath the edge. LEERS. Mr. Bourne observes that the petals in the plants growing about Worcester have no mark at all upon the upper surface, nor have they any dots at the margin, but some dusky purple streaks on the under surface. In other respects the plants agree with the description of Leers.

*Imperforate St. John's Wort.* Discovered first as an English plant by Dr. SEWARD of Worcester, growing plentifully about Sapey in that county. At Hafod, Cardiganshire, and in Mr. Knight's woods at Downton Castle, near Ludlow, by Dr. SMITH. See E. bot. (North Mimms, Herts. Mr. SABINE, in *Fl. Brit.* In a stone quarry at Hutton near Ripon. Mr. BRUNTON. Near Whiston, by the road to Washington, Sussex. Mr. BORRER. Frankwell Bank, Shrewsbury. Dr. EVANS. Plentiful about Penrice, Glamorganshire. Mr. DILLWYN. Near Downing, Flintshire. Rev. H. DAVIES. Banks of the Tees, near Middleton. Rev. J. HARRIMAN. *Bot. Guide.* About Garn, near Denbigh. Mr. GRIFFITH. E.) In Mr. Digby's plantation at Meriden, Warwickshire.

P. July—Aug.

\* This plant has long held a place in the materia medica, but its use is very much undetermined. The semi-transparent dots on the leaves, are the receptacles of an essential oil. The leaves given in substance, are said to destroy worms. (Dr. Swediaur recommends an infusion of the flowering heads in hæmoptysis, and worms. E.) The flowers tinge spirits and oils of a fine purple colour, which is probably derived from the little glands upon the anthers, and upon the edges of the petals. Cows, goats, and sheep eat it. Horses and swine refuse it.—(On the Eve of St. John the Baptist, the people of North Wales fix sprigs of this plant over their doors, and sometimes over their windows, in order to purify their houses, and by that means drive away all fiends, and evil spirits, in the same manner as the Druids were accustomed to do with Vervain. *Bingley's Tour.* E.)

H. Flowers axillary, solitary; stems 2-edged, prostrate, humifusum. thread-shaped; leaves smooth.

*Curt.* 162-*Fl. dan.* 141-*E. bot.* 1226-*Clus.* ii. 181. 3-*Dod.* 76. 2-*Lob. ic.* i. 400. 1-*Ger. em.* 541. 4-*Pet.* 60. 8-*Trag.* 72. 2-*J. B.* iii. 386. 1-*H. ox.* v. 6. 3.

*Stems* numerous. *Leaves* opposite, sitting, egg-shaped, or bluntly oval, entire, with seven veins, with semi-transparent dots not distinguishable but with a glass and a strong light. *Fruit-stalks* also terminating. *Floral-leaves* none. Mr. WOODWARD. *Stems* somewhat flattened. *Leaves* oblong, smooth, set with glands near the edges, scored with semi-transparent lines. *Flowers* sometimes in pairs. *Calyx* segments unequal, spear-shaped, terminated by a very small point, a little toothed at the edges, marked with dark purple spots and streaks. *Petals* yellow, with a tinge of red on the outside, set with a few blackish glands at the end. *Stamens* in 3 sets, 5 or 6 in each. *Anthers* without glands. *Summit* sometimes tinged with red.

*Trailing St. John's Wort.* Meadows, pastures, heaths, and woods, as Ronck's Wood, near Worcester. ST. Stuston Common, near Diss, Norfolk, (and in Richmond Gardens. E.) Mr. WOODWARD. Malvern Common, Worcestershire. Mr. BALLARD. Wick Cliffs. Mr. SWAYNE. Manchester race ground. P. July.  
Mr. CALEY.

Var. 2. Leaves growing by threes.

H. Stem cylindrical, creeping, woolly; leaves woolly, elodes. roundish; (panicle with few flowers. *Fl. Brit.* E.)

*Dicks. h. s.-E. bot.* 1109-*Pet.* 60. 12.

*Stems* trailing and creeping. *Flowering branches* ascending, 5 or 6 inches high. *Leaves* sitting, frequently slightly nicked at the end, with five ribs, and with dots not visible but with a glass, and held against a strong light. *Flowers* few in a panicle. *Panicle* branched, leafless. *Floral-leaves* oval-spear-shaped, minute, reddish, edged with red glands, a pair beneath each division. *Calyx* reddish, about one-fourth as long as the blossom, deeply divided; segments oval, edged with minute red glands. *Blossom* reddish yellow, usually closed, twisted spirally, sometimes merely folded up. Mr. WOODWARD. *Stem* 3 to 8 inches long. *Leaves* opposite. *Fruit-stalks* smooth, terminating. *Petals* yellow, with 8 greenish lines, and a small greenish gland on the inner side of the claw. *Filaments* in 3 sets, about 3 in one set, 4 in another, and 5 in the third. (*Stems* chiefly woolly on the upper surface. *Fl. Brit.* E.)

*Marsh St. John's Wort.* Marshy places, in a peaty spongy soil. Bogs in Norfolk, not unfrequent. Boggy ground near Norwich. Mr. WOODWARD. Bog at Cosgarne, Cornwall. Mr. WATT. (Crosby near Liverpool. Dr. BOSTOCK, E.) Bogs on Birmingham Heath. P. July—(Aug. E.)

montanum. H. Calyx serrated with glands; stem cylindrical, upright; leaves egg-shaped, smooth.

*E. bot.* 371—*Fl. dan.* 173—*Col. ecphr.* 74. 1—*Trag.* 73. 3—*Pet.* 60. 7—*J. B.* iii. 383. 2—*H. ox.* v. 6. 9—*Fuchs.* 74.

*Floral-leaves* at the top of the stem, small, and fringed with glandular hairs, which is not the case with *H. hirsutum*. LINN. *Stem* upright, cylindrical, smooth. *Leaves* in pairs, sitting, egg-shaped, the upper egg-spear-shaped, smooth, with 7 ribs, and a net-work of veins, the edges set with black dots. *Flowers* in panicles. *Panicles* branched, terminating, or from the bosom of the upper-leaves. *Floral-leaves*, *fruit-stalks* and *calyxes* beset with strong hairs, each terminated by a black gland. *Calyx* divided almost to the base; segments spear-shaped, pointed. WOODWARD. *Upper-leaves* with numerous, minute, circular, transparent dots, visible to the naked eye, in the lowermost pairs only dotted towards the base. *Blossom* yellow. *St.* (Stem two feet high. E.)

*Mountain St. John's Wort.* Woods and thickets, in mountainous situations. Frequent in the West of England, Charlton Wood. Above Bwrdd Arthur, Anglesea. Mr. DAVIES. Syke's Wood, near Ingleton, Yorkshire. CURTIS. Hedge banks and sides of woods about Pershore and Bredon Hill, Worcestershire. NASH. [Bath Hills, near Bungay, Suffolk. Mr. WOODWARD. Near Cartmell Well. Mr. JACKSON. Many barren places in Furness Fells. Mr. ATKINSON.] P. July.

hirsutum. H. Calyx serrated with glands; stem cylindrical, upright; leaves egg-shaped, somewhat downy.

*Curt.* 182—*E. bot.* 1156—*Kniph.* 8—*Pet.* 60. 10—*H. ox.* v. 6. 11—*Fl. dan.* 802—*Fuchs.* 76—*J. B.* iii. 382. 2.

The *flowers* close in the night; those of the *H. perforatum* do not. LINN. *Stem* upright, (about two feet high, E.) nearly cylindrical, with a brownish short wool. *Leaves* in cross pairs, those of the stem egg-shaped, broader than those of *H. perforatum*, rough with short hair, with 7 or 9 ribs, and numerous semi-transparent dots; those of the branches spear-shaped. *Floral-leaves* with glandular serratures at the edges. *Calyx* segments spear-shaped, with about 12 glands on each. *Petals* yellow,



entire, with 6 or 8 ribs, and a few black glands at the end. *Stamens* about 24. *Germs* egg-shaped. *Styles* thread-shaped, yellow. *Summits* crimson. (*Flowers* only half the size of those of *H. montanum* E.)

*Hairy St. John's Wort*. Thickets and hedges. [Wick Cliffs. Mr. SWAYNE. At the foot of Ingleborough, near to Hurtlepot, and many other places in Craven, Yorkshire. Mr. CALEY.]

P. June—July.

H. Calyx serrated with glands; stem cylindrical; leaves pul'chrum. embracing the stem, heart-shaped, smooth.

*Curt.—Fl. dan.* 75—*E. bot.* 1227—*Walc.—Trag.* 74—*Pet.* 60. 6—*Lonic.* i. 130. 2—*J. B.* iii. 383. 1.

*Stem* upright, often red. *Leaves* in distant pairs, heart or obtusely egg-shaped, green above, sea-green beneath, with numerous semi-transparent dots. *Flowering-branches* from the bosom of the upper leaves, slender, with one or more flowers at the end, and one or two small leaves. *Floral-leaves* none. *Calyx* very short, deeply divided; segments oval, blunt; glands black. *Petals* set at the edge with black glands. WOODWARD. *Stem* smooth. *Leaves* in opposite pairs. *Calyx* and *petals*, edges set with dark-coloured glands. *Filaments* shining, yellow, in 3 sets, about 18 in each set. *Anthers* scarlet. (*Stem* a foot and a half high. *Blossom* deep yellow, reddish on the outside. E.)

*Small Upright St. John's Wort*. Hedges, and heaths, in exposed sunny situations. [Heaths near Norwich. Mr. CROWE. Heaths in Hertfordshire. Mr. WOODWARD. Wick Cliffs. Mr. SWAYNE. On a sloping bank near the wall on the East side of Edgbaston Park. Miss WITHERING.] (Knot's-hole near Liverpool. Dr. BOSTOCK. E.)

P. June—July.

(H. Calyx and petals fringed and dotted; leaves ovate, barba'tum. dotted; stem erect, slightly angular.

*Jacq. Austr.* 259—*E. bot.* 1986.

*Stems* a foot or more in height, leafy, straight, scarcely branched except at the top; round and purplish at the bottom. *Leaves* sessile, opposite, bluntish, entire, slightly revolute, smooth, veiny, sprinkled on both sides with dark purplish glandular dots. *Flowers* yellow, in a terminal, leafy, upright, forked panicle; *bractææ* and *calyx-leaves* spear-shaped, dotted, strongly and copiously fringed with long pale glandular hairs. *Petals* obovate, minutely fringed or toothed, dotted. *Stamens* in 3 sets. *Anthers* orbicular. *Styles* 3. E. bot.



*Bearded St. John's Wort.* This beautiful species, first introduced to the British Botanist by means of the English Botany, was discovered by Mr. G. DON, by the side of a hedge near the wood of Aberdaly in Strath Earn, Perthshire, but sparingly. P. Sept—Oct. E.

(3) *Styles 5, stems shrub-like.*

(caly'cinum. H. Flowers solitary; branched, quadrangular; segment of the calyx obovate, blunt, leaves oblong.

*E. bot.* 2017—*Curt. Mag.* 146.

*Roots* creeping. *Branches* simple, leafy, square, each terminated by a flower larger than in any other *Hypericum*, of a rich golden yellow, with 5, rarely 4, styles. *Petals* often lobed. *Leaves* sessile, elliptic-oblong, entire, paler beneath. *E. bot.* In our specimens the leaves are neither decidedly blunt, nor punctate, as described in *E. bot.* *Flowers* growing singly; petals nearly one and half inch long.

*Large-flowered St. John's Wort.* The only two natural stations in which this showy plant has hitherto been discovered are in woods about Belgrad near Constantinople, whence it was brought to England by Sir G. Wheeler in 1676, and very recently in considerable abundance and undoubtedly wild about three miles from Cork, in the way to Bandon, by Mr. DRUMMOND, curator of the botanic garden of Cork. It thrives well even under trees, and is calculated to ornament shrubby grounds. Remarks on the Synonyms of this plant may be found in the tenth vol. of Linn. Trans. by the President.

P. July—Sept.

Since writing the above we have the pleasure to communicate, by means of our friend Dr. Bostock, the first English native habitat of this very rare plant; it having been lately found growing plentifully in a wood near Hale, Lancashire, the seat of — Blackburn, Esq. M. P. by Mr. SHEPHERD, curator of the Liverpool botanic garden. E.)

# SYNGENESIA.

ÆQUALIS.

(1) *All the Florets strap-shaped.*

- ICHO'RIUM.....*Recept.* somewhat chaffy: *Down*  
                                 chaff-like: *Cal.* double.  
 IPOCHÆRIS....*Recept.* chaffy: *Down* somewhat  
                                 feathered: *Cal.* tiled.  
 RAGOPO'GON....*Recept.* naked: *Down* feathered; on  
                                 a pedicle: *Cal.* simple.  
 YCRIS.....*Recept.* naked: *Down* feathered; on  
                                 a pedicle: *Cal.* double.  
 EONTODON.....*Recept.* naked: *Down* on a pedicle:  
                                 *Cal.* tiled; scales flexible.  
 RE'PIS .....*Recept.* naked: *Down* hair-like: *Cal.*  
                                 double, with scales of different  
                                 shapes.  
 RENAN'THES....*Recept.* naked: *Down* hair-like:  
                                 *Cal.* double; containing about 5  
                                 florets.  
 ACTU'CA .....*Recept.* naked: *Down* hair-like; on  
                                 a pedicle: *Cal.* tiled; scales  
                                 skinny at the edges.  
 ERA'CIIUM.....*Recept.* naked: *Down* hair-like; sit-  
                                 ting: *Cal.* tiled; egg-shaped.  
 ON'CHUS.....*Recept.* naked: *Down* hair-like;  
                                 sitting: *Cal.* tiled; bellying (at  
                                 the base.)  
 APSANA .....*Recept.* naked: *Down* none: *Cal.*  
                                 double.

HYO'SERIS.....*Recept.* naked: *Down* hair-like; *en*  
 compassed by awned chaff: *Ca*  
 equal.

(2) *Flowers in globular heads.*

CARLI'NA .....*Cal.* radiate: *Rays* coloured.

ARCTIUM.....*Cal.* scales bent inwards at th  
 points, and hooked.

CARDUUS.....*Cal.* with thorny scales; bellying  
*Recept.* hairy.

ONOPORDON.....*Cal.* with thorny scales; bellying  
*Recept.* like a honey-comb.

SERRA'TULA.....*Cal.* nearly cylindrical; tiled  
 scales rather acute but no  
 thornlike.

[*Centaurea nigra.*]

(3) *Florets all tubular.*

EUPATO'RIMUM....*Recept.* naked: *Down* feathered  
*Cal.* tiled: *Pistil* very long.

SANTOLI'NA.....*Recept.* chaffy: *Down* none: *Ca*  
 tiled; hemispherical.

BI'DENS.....*Recept.* chaffy: *Down* awn-like  
*Cal.* tiled.

[*Senecio vulgaris.* *Tanacetum vulgare.* *Tussilago Petu*  
*sites.* *Aster Tripolium.*]

## SUPERFLUA.

(1) *Florets all tubular.*

ARTEMISIA .....*Recept.* almost naked: *Down* none  
*Florets* in the circumference  
 without a petal.

TENACE'TUM.....*Recept.* naked: *Down* only a sort of  
 border: *Bloss.* of the circum  
 ference 3-cleft.

ONYZA.....Recept. naked: Down hair-like:  
Bloss. of the circumference 3-  
cleft.

GNAPHALIUM....Recept. naked: Down feathered, or  
hair-like: Cal. with skinny con-  
cave scales.

[Senecio vulgaris. Tussilago Petasites, hybrida. Aster  
Tripolium. Erigeron. Bidens.]

(2) Flowers radiate.

BELLIS.....Recept. naked: Down none: Cal.  
simple, with equal scales!

MATRICARIA.....Recept. naked: Down none: Cal.  
tiled: scales acute.

CHRYSANTHEMUM.Recept. naked: Down none: Cal.  
the inner scales membra-  
ceous.

DORONICUM.....Recept. naked: Down hair-like:  
Strap-shaped florets, without  
down.

NULA.....Recept. naked: Down hair-like:  
Anthers with 2 bristles at the  
base.

ERIGERON.....Recept. naked: Down hair-like:  
Bloss. in the circumference very  
slender.

SOLIDA'GO.....Recept. naked: Down hair-like:  
Bloss. of the circumference  
about 6; remote.

CINERA'RIA .....Recept. naked: Down hair-like: Cal.  
equal; simple.

SENE'CIO.....Recept. naked: Down hair-like:  
Cal. with the scales dead at the  
ends.

TUSSILA'GO.....Recept. naked: Down hair-like: Cal.  
scales somewhat membranace-  
ous.



SYNGENESIA. ÆQUALIS. Tragopogon.

ASTER.....Recept. naked: Down hair-like  
Cal. scales the point standing  
out.

ANTHEMIS.....Recept. chaffy: Down none: Cal.  
hemispherical.

ACHILLEA.....Recept. chaffy: Down none: Cal.  
oblong: Strap-shaped floret  
about 5.

FRUSTRANEA.

CENTAUREA.....Recept. bristly: Down hair-like  
Bloss. of the circumference  
tubular.

NECESSARIA.

CALENDULA.....Recept. naked: Down none: Seeds  
membranaceous.

[Tussilago Farfara. (St.) Erigeron.]

ÆQUALIS.

TRAGOPO'GON. Receptacle naked: calyx sim-  
ple: down feathered.

praten'se.

T. Calyx as long as the rays of the blossom: leaves entire  
quite straight: fruit-stalk cylindrical.

E. bot. 434-Ludw. 49-Kniph. 9-Fl. dan. 906-Lonic. i.  
95. 4-Fuchs. 821-J. B. ii. 1059. 1-Trag. 280-Dod.  
256: 2-Lob. obs. 297. 2, and ic. i. 550. 2-Ger. em.  
735. 2-Pet. 15. 6-H. ox. vii. row. 1. 1-Matth. 537-  
Ger. 595. 2.

Blossoms yellow, expanding about three in the morning,  
and closing between nine and ten. LINN. Unless the sky be  
cloudy. RELHAN. Calyx in specimens gathered in Hunting-

lonsshire always exactly equal with the blossom, in Norfolk invariably exceeding it. The stems of the latter much shorter. Are they not distinct species? **WOODWARD**. Segments of the calyx in the Cornish plants always much longer than the blossom. **Mr. STACKHOUSE**. Whole plant smooth, stiff, strong, upright. Leaves very long and narrow, tapering. Calyx, leaves purplish at the edge. Anthers purple. Pollen yellow. Seeds crooked. Receptacle, there are glandular substances in the little hollows at the base of each floret, which, when the blossoms fall, turn brown, the receptacle remaining white. Root spindle-shaped, milky, sweet. Stems a foot and half high, often tinged with purple. Leaves alternate, embracing the stem, keeled, sharp-pointed, widening at the base. *Fl. Brit. E.*)

*Yellow Goat's-beard*. Meadows and pastures. B. June.\*

**F.** Calyx longer than the rays of the blossom; leaves enporrifolium. tire, stiff and straight; fruit-stalks thickening upwards; florets very narrow, lopped.

*Jacq. ic. i. - E. bot. 638 - Kniph. 7 - Fl. dan. 797 - Ger. 595. 1 - Park. par. 511. 8 - Matth. 538 - Dod. 256. 1 - Lob. obs. 297. 1, and ic. i. 550. 1 - Ger. em. 735. 1 - Park. 412 - Pet. 15. 7 and 8 - H. ox. vii. 9. 5.*

Stem-leaves shorter than in *T. pratense*, scarcely longer than the space between the joints. Calyx about one-third longer than the blossom. Blossom purple. **WOODWARD**. (Herb glaucous, smooth, four feet high. Anthers black. *Fl. Brit. E.*)

*Purple Goat's-beard*. *Salsafy*. Meadows and pastures. In Cornwall, and fields about Carlisle and Rose Castle, Cumberland. Marshes near Long-Reach, below Woolwich, and meadows near Edmondton. [In upland pastures not unfrequent. **Mr. WOODWARD**.] (On the banks of the Chalder near Whalley, Lancashire. **GERARDE**. Meadows below St. Vincent's Rocks, Bristol. **Mr. SOWERBY** and **Mr. D. TURNER**. About Ripton, Huntingdonshire. **Mr. WOODWARD**. Moist marshes in the parish of Whiteford near Holywell. **BINGLEY**. Marshes near Purfleet, Essex. **Mr. E. FORSTER, jun.** in *Bot. Guite. E.*) B. May-June.†

\* Before the stems shoot up, the roots, boiled like Asparagus, have the same flavour, and are nearly as nutritious. Cows, sheep, and horses eat it. Swine devour it greedily. Goats are not fond of it.

† The roots are esculent, and when cultivated in gardens are called *Salsafie*.

**PICRIS.** *Receptacle* naked: *calyx* double: *down* feathered: *seeds* with transverse furrows.

*echioi'des.* P. Outer calyx of 5 leaves, larger than the inner; the inner awned; (down standing on a pedicle. E.)

*Curt.* 150—*E. bot.* 972—*Pet.* 12. 12—*Ger.* 655. 2—*J. B.* ii. 1029. 1—*Lob. ic.* i. 577. 2—*Ger. em.* 798. 2—*H. ox.* vii. 5. 38.

*Root-leaves* oval, scolloped, stiff with numerous warty protuberances, which, as also the ribs and edges, are set with short thorn-like hairs. *Stem* firm, cylindrical, scored, usually purplish, much branched; with scattered, stiff, thorn-like hairs. *Leaves* heart-spear-shaped, waved at the edge, set with sharp stiff hairs, particularly on the edge and mid-rib. *Flowers* single, on fruit-stalks. *Fruit-stalks* somewhat thickening upwards. *Calyx*, leaves of the *outer* heart-shaped, taper-pointed, ending in a sharp awn, very much expanding, fringed with stiff hairs; scales of the *inner* fringed on the back. *Down* of the length of the inner calyx, on a foot-stalk three or four lines long. *Seeds* shining, very beautiful when magnified. **WOODWARD.** *Blossom* yellow, expanding at four or five in the morning, and never closing before noon; sometimes remaining open till nine at night.

*Bristly Ox-tongue.* Borders of cornfields. (Frequent about London. By Wrongay church, near Lymington. *E. bot.* E.) [Between Stockton and Norton; Durham. Mr. ROBSON.] (Norfolk and Suffolk, on a clayey soil, common. Mr. WOODWARD. E.)

A. July—Aug.\*

*Hieracioi'des.* P. Calyx loose; leaves entire; fruit-stalks scaly up to the calyx; (down sessile. E.)

*E. bot.* 196—*Ger.* 234. 8—*Ger. em.* 298. 7—*J. B.* ii. 1029. 2.

*Leaves* spear-shaped. *Fruit-stalks* with scattered awl-shaped scales extending up to the calyx, till the calyx becomes nearly tiled. *Down* scarcely feathered. **LINN.** *Stem* firm, scored, rough with stiff hairs. *Leaves* rough, the *lower* on leaf-stalks, the *upper* sitting, spear-shaped, pointed, toothed; the *upper*—

\* This is an agreeable pot-herb when young. The juice is milky, but not too acrid.

most strap-spear-shaped. *Fruit-stalks* branched, each branch bearing one flower. *Calyx* scarcely to be called double, the loose scales on the top of the fruit-stalk approaching to and at length tiled with the calyx, the leaves of the inner row nearly strap-shaped, parallel, hairy on the outside, exactly the length of the feather. *Feather* sitting, thinly downy. *Seeds* longitudinally and transversely furrowed. **WOODWARD.** *Flowers* yellow.

*Yellow Succory. Hawkweed Ox-tongue. Hedypnois Hieracioides.* HUDS. Borders of cornfields in a calcareous soil.

B. July—Aug.

**SONCHUS.** *Recept.* naked: *calyx* tiled, belly-ing: *down* hair-like.

*S.* Fruit-stalk and calyx hispid; leaves notched; (terminating lobe very large, trowel-shaped; E.) flowers in bunches.

*Fl. dan.* 182—*Clus.* ii. 147. 1—*Ger. em.* 294. 7—*Park.* 808. 1—*Park.* 807. 1—*J. B.* ii. 1006—*Ger.* 231. 6.

(*Stems* upright, about three feet high, undivided, leafy. *Leaves* alternate, embracing the stem, notched-lyre-shaped, lightly toothed, smooth, glaucous beneath; the upper ones trap-shaped, fringed. *Flowering-bunch* terminating, upright, solitary, hispid, reddish, covered with viscid glands. *Bractæ* trap-shaped. *Calyx* hispid, tinged with red. *Blossom* purplish blue, twice as long as the calyx. *Anthers* red. *Seeds* compressed. *Down* harsh, not feathery. *Fl. Brit. E.*) Terminating lobe of the leaves very large. *Flowers* blue, sometimes white.

*Blue Sow-thistle. S. cæruleus.* CAM. Epit.—*Fl. Brit.* Bot. Guide. *S. cæruleus latifolius.* BAUH. hist. *S. alpinus.* HUDS. *Fl. dan.* but very distinct from that of LINN. *S. canadensis.* LINN. WITH. Ed. 3 and 4. HULL. SYM. Syn. Mountainous pastures. Borders of cornfields about Willington and Howden-Pans, Northumberland. WALLIS. *Northumb.* 186.

P. July—Aug.  
(We readily restore the more antient and discriminative appellation, this being the only blue-flowered *Sonchus* of British growth. E.)

*S.* Fruit-stalks and calyxes rough with hair, in a sort arvensis. of umbel; leaves notched, heart-shaped at the base.



*Curt.* 265-*E. bot.* 674-*Pet.* 14. 6-*Fuchs.* 319-*J. B.* ii. 1018.  
 1-*Lob. obs.* 119. 3, and *ic.* i. 237. 1-*H. ox.* vii. 6. 12-  
*Lonic.* 92. 1-*Matth.* 765-*Ger.* 231. 7-*Ger. em.* 294. 8-  
*Park.* 808. 3.

*Flowers* expand between six and seven, and close between eleven and twelve in the forenoon, LINN. *Leaves* embracing the stem; segments triangular, toothed; teeth sharper and more thorny than those of *S. palustris*; the upper spear-shaped, but not tapering out to so great a length. *Seeds* oval, compressed, longitudinally and transversely furrowed. *Down* sitting. WOODWARD. *Stems* rough with glandular bristly hairs. *Leaves* embracing the stem, perfectly smooth, except at the edges, which are almost thorny. *Hairs* of the calyx and fruit-stalks pale green, terminated by yellow globules. (*Root* creeping, fleshy, lactescent. *Stem* three or four feet high, hollow. *Panicle* few-flowered, terminating, hispid. *Blossom* vary large, golden yellow. E.)

*Corn Sow-thistle.* Cornfields and ditch banks.

P. Aug.\*

*palustris.*

*S.* Fruit-stalks and calyxes rough with hair, in a sort of umbel; leaves notched, arrow-shaped at the base.

*Curt.* 298-*E. bot.* 935-*Fl. dan.* 1109, and 606-*Pet.* 14. 7-  
*Clus.* ii. 147. 3-*Ger. em.* 294. 9-*Park.* 808. 2-*H. ox.*  
 vi. 9, row. 3. 11.

In habit it is very distinct from *S. arvensis*, but its structure is so much the same, that *S. palustris* might be supposed to have originated from *S. arvensis*. *Flowers* clustered, expand at six or seven in the morning, and close at two in the afternoon. LINN. *Root* not creeping. *Stems* several, six to ten feet high. CURTIS. *Stems* four to eight feet high. *Lower stem-leaves* very large; upper arrow-shaped, and embracing the stem at the base, segments spear-shaped, variously curved, two or three pair, with a terminating one very long, smooth, finely toothed at the edge, the principal rib running near the inner edge; the *upper-leaves* arrow-spear-shaped, lengthened out into a long point. *Floral-leaves* awl-shaped. WOODWARD. *Blossom* yellow, (twice as long as the calyx. One of the tallest herbaceous plants; attaining the height of from five to seven feet. *E. bot.* E.)

\* The flowers follow the course of the sun very regularly. Cows and goats eat it. Horses are very fond of it.

*Marsh Sow-thistle.* Watery places and banks of rivers. (On the banks of the Waveney between Beccles and Yarmouth. Mr. WOODWARD. Near Streatham Ferry, Isle of Ely. RELHAN, (but said not to have been found there latterly. Several places about Nottingham. DEERING. River side at Reedham, Norfolk. Mr. WIGG, in *Bot. Guide*, E.) On those of the Thames about Greenwich, Blackwall, and Poplar.

P. July—Aug.

S. Fruit-stalks cottony: calyxes smooth; (leaves notched, oleraceous, toothed. Fl. Brit. E.)

*E. bot.* 843.

*Leaves* closely embracing the stem. *Fruit-stalks* at length becoming smooth. LINN. *Upper leaves* frequently jagged and indented, like the lower, but not so deeply. WOODWARD. *Flowers* yellow. (Root spindle-shaped. Stem branched, brittle. *Leaves* with acute lobes, more or less toothed or spinous. *Calyx* smooth. E.)

*Sow-thistle. Hare's Lettuce. Milkweed.*

Var. 1. *lævis*. Leaves smooth, the lower with winged clefts, the lower segments long.

*Curt.* 123—*Ger.* 231. 5—*Clus.* ii. 146. 1—*Dod.* 643. 1—*Lob. obs.* 119. 1, and *ic.* i. 235. 2—*Ger. em.* 292. 3—*H. ox.* vii. 3. 1—*Pet.* 14. 10—*Ger.* 230. 4—*Matth.* 497.

*Common Sow-thistle. Smooth jagged Sow-thistle.* Cultivated ground, especially in a rich soil, dung-hills, and hedges.

A. June—Aug.

Var. 2. Segments fewer, the terminating one triangular and very broad. RAY.

*Fl. dan.* 682—*Blackw.* 130—*Ger.* 230. 3—*Ger. em.* 292. 4—*Park.* 806. 3—*J. B.* ii. 1016. 1—*H. ox.* vii. 3, row 1. 2—*Pet.* 14. 8—*Matth.* 496, *S. aspera*.

*Smooth broad Sow-thistle.*

Var. 3. *asper*. Leaves prickly, jagged, shining on the upper surface, the edge waved and set with thorny teeth; the lower lobes rounded.

*Fl. dan.* 843—*Blackw.* 30—*Ger.* 229. 2—*Park.* 229. 2—*J. B.* ii. 1016. 2—*Fuchs.* 675—*Pet.* 14. 5.

*Stem* two to three feet high, upright, thick, angular: the angles thin, skinny, tinged with purple. *Leaves* with winged clefts; segments variously jagged and toothed, some extending almost to the mid-rib, the lower leaves a foot long: mid-rib broad, white, and smooth. *Fruit-stalks* soon losing their cotton. *Calyx* scales each with two or three little thorns on the back.

*Prickly jagged Sow-thistle*. [Uncultivated ground, sides of roads and hedges.] May, about the latter end. St.

Var. 4. Leaves prickly, entire. St.

*Fuchs*. 674—*Dod*. 643. 3—*Lob obs*. 118. 2. 3, and *ic*. i. 235. 1—*Ger. em*. 291. 2—*J. B*. ii. 1014. 2—*Park*. 803. 1—*H. ox*. vii. 2, row 3. 5—*Pet*. 14. 4—*Lonic*. i. 93. 1—*Dod*. 643. 2—*Lob. ic*. i. 234. 2—*Ger. em*. 291. 1—*H. ox*. vii. 2. 8.

*Prickle-dented Sow-thistle*. Fields, and in woods where the underwood has been cleared.

July to Nov. 20. No other variety growing near it.

Var. 5. Leaves inversely egg-shaped, tapering below into leaf-stalks.

*Pluk*. 61. 5—*Pet*. 14. 1.

*Round-leaved Sow-thistle*. Cornfields about London.

Var. 6. Leaves strap-oblong, rounded at the end.

*Pluk*. 62. 4—*Pet*. 14. 3.

*Narrow Sow-thistle*.

Var. 7. Stemless; leaves spread on the ground, deeply wing-cleft; segments sharply toothed.

I found this singular variety on Portland Island in the month of May. It had a yellow blossom, and the fruit-stalks and calyxes smooth, as in the other varieties of the *Sonchus oleraceus*, but the flowers sat close upon the root. This circumstance may possibly be the effect of its maritime situation, but if not, it may prove to be a new species, as is not improbable, because I have observed some other varieties assume their usual habit, and their usual size, when growing near the sea, only sometimes the whole plant, except the blossom, in such situations, partakes of a purplish red colour.\*

\* The leaves are good amongst other pot-herbs. They are a very favourite food with hares and rabbits. Sheep, goats, and swine eat it. Horses are not fond of it. The *Aphis Sonchi* lives upon it.

**LACTU'CA.** *Receptacle naked: calyx tiled, cylindrical, the scales membranaceous at the edge: down hair-like, on a pedicle.*

**L.** Uppermost leaves upright, their mid-rib prickly on the Scari'ola back.

*E. bot.* 268—*Fuchs.* 301—*Dod.* 646—*Ger. em.* 309. 3—*J. B.* ii. 1003—*Pet.* 15. 3—*H. or.* vii. 2. 17—*Matth.* 522—*Lob. obs.* 118. 1, and *ic.* i. 234—*Park.* 814. 2—*Barr.* 135—*Trag.* 259.

(Whole plant glaucous, lactescent, but milder than *L. virosa*. Stem ending in a panicle. E.) *Leaves*, the lowermost also indented. **RAY.** *Stem-leaves* constantly with deeper winged clefts than those of *L. virosa*. *Flowering branches* pointing upward, not expanding. *Flowers* smaller. *Pedicle* of the down much shorter. **WOODWARD.** *Blossom* yellow, (rather small. E.)

*Prickly, or Mild-scented Lettuce.* On rubqish, sides of cornfields, ditch banks, and stony ground. Isle of Ely. [Burwell, near New-market. Mr. TURNER.] (On banks near Pancras, Middlesex, and in a sand pit at Charlton wood, Kent. Mr. E. FORSTER, jun. Near the entrance into Peake's Hole, Derbyshire. Mr. J. MARTIN, in *Bot. Guide.* E.) B. Aug.

**L.** All the leaves horizontal, toothed; mid-rib prickly viro'sa. on the back.

*E. bot.* 1957—*Collin obs.* vi. præf. p. ix.—*Woodv.* 250—*J. B.* ii. 1002—*Pet.* 15. 2—*H. or.* vii. 2. 16.

*Stem* prickly below. *Leaves* arrow-shaped, sitting, the edge, and especially the keel prickly. A variety of *L. Scariola* according to M. Gerard and Haller. **LINN.** *Leaves*, the lowermost entire, not wing-cleft. **RAY.** *Stem* two to four feet high. *Root-leaves* oblong, wedge-shaped, toothed at the edge; *stem-leaves* arrow-shaped, embracing the stem, either entire or wing-cleft, sharply toothed; *flower-leaves* arrow-shaped, half embracing the stem, broad at the base, tapering to a sharp point, one at the base of each flowering branch. *Flowering-branches* expanding. *Flowers* sitting, or on short fruit-stalks. *Floral-leaves* similar to the stem-leaves but smaller, one at the base



of each fruit-stalk, and others still smaller on the fruit-stalks. *Calyx*, scales unequal, spear-shaped. *Seeds* furrowed and rough. **WOODWARD.** *Blossom* numerous, yellow, opening about seven, and closing about ten in the forenoon. *Seeds* black.

*Cut Lettuce.* *Strong-scented Lettuce.* Ditch banks. (Common in calcareous soil. E.) [Borders of fields. In a stone quarry at Thorp Arch, Yorkshire. Mr. **WOOD.** World's End, near Stepney, and banks of the Thames between Blackwall and Woolwich. Mr. **JONES.** Old walls in Bungay, Suffolk, (and near Diss, Norfolk. E.) Mr. **WOODWARD.**]

B. July—Aug.\*

Var. 2. Leaves entire.

*Pet.* 15. 1-*Trag.* 268-*Lonic.* i. 91. 3-*Lob. adv.* 89, and *ic.* i. 241. 1-*Ger. em.* 309. 1-*Park.* 813.

*L. Scariola* β. **HUPS.** **DR. STOKES.**

With variety 1, but less frequent. **RAY.**

salig'na.

L. Leaves halberd-strap-shaped, sitting; mid-rib prickly on the back.

*Jacq. austr.* 250-*E. bot.* 707-*Hall. jen.* 4. at. p. 207-*C. B. pr.* 68. 1-*Park.* 783. 4-*H. ox.* vii. 6. 18-*Pet.* 15. 4.

*Leaves* perpendicular, nearly as in *L. Scariola*. **LINN.** *Leaves* arrow-shaped at the base; the lower with winged clefts; segments few, alternate, strap-shaped, finely toothed, with a sharp point at the end, somewhat hooked, the terminating one long; the upper entire, strap-shaped; the mid-rib not always prickly. *Floral-leaves* arrow-shaped, broad at the base, tapering to a point. *Flowers* nearly sitting, small. **WOODWARD.** *Blossom* yellow, (longer than the calyx. E.)

*Least Lettuce.* *Narrow-leaved Lettuce.* Ditch banks and pastures in a chalky soil. (About Pancras. **RAY.** Lanes in Dorsetshire, but rare.

B. Fl. Brit. E.) A. Aug.

**PRENANTHES.** *Receptacle* naked: *calyx* double: *down* hair-like, nearly sitting: *florets* in a single row.

\* The juice smells like opium. It is milky, acrid, and bitter. **DR. COLLIN** relates 24 cases of dropsy, out of which 23 were cured by taking the extract prepared from the expressed juice, in doses from 18 grains to 3 drams

*P.* Florets 5 ; leaves notched.

*muralis*.

*Curt.*—*E. bot.* 457—*Fl. dan.* 509—*Clus.* ii. 146. 2—*Lob. obs.* 119. 2. and *ic.* i. 236. 1—*Ger. em.* 293. 5—*Park.* 805. 2—*J. B.* ii. 1004—*Pet.* 15. 5.

(*Root* rather ligneous. A slender, smooth, brittle, lactescent plant. *Florets* yellow, opening wide, longer than the calyx. *Fl. Brit. E.*) *Down* on a very short pedicle. *Root-leaves* on long leaf-stalks, deeply notched ; lower segments few, small, somewhat oval, the terminating one large, somewhat triangular, with five lobes, resembling the leaves of Ivy in its creeping state. *Flowering branches* subdivided. *Fruit-stalks* slender, each with one flower. *WOODWARD.* *Stem-leaves* embracing the stem, deeply notched ; *segments* opposite, toothed, the terminating one largest. *Calyx*, outer, scales three, spear-shaped ; inner strap-shaped, generally coloured. *Seeds* oblong, compressed, scored. *Down* on a flat circular substance, supported by a little pedicle.

Var. 2. *Stem-leaves* spear-arrow-shaped.

*Stems* smooth, purplish. *Branches* from the blossom of the leaves. *Stem-leaves* smooth, embracing the stem, the lower toothed, the upper very entire. *Floral-leaves* arrow-shaped, at the subdivisions of the fruit-stalks. *Calyx* purple ; outer, scales rarely four, spear-shaped. *Blossom* yellow ; *florets* with five teeth. *Germen* heart-shaped. *Down* nearly sitting, but the pedicle lengthens as the seed ripens.

*Wall Ivy-leaf.* *Ivy-leaved Lettuce.* *Walls.* Shady woods, (particularly in calcareous soil. *E.*) P. July.

**LEONTODON.** *Receptacle* naked : *calyx* tiled ; the inner scales parallel, equal : *down* hair-like.

(1) *Down* on a pedicle.

**L.** Outer scales of the calyx entire, reflected ; leaves *Taraxacum*. smooth, notched and acutely toothed.

in 24 hours. It commonly proves laxative, promotes urine and gentle sweats, and removes the thirst. It must be prepared when the plant is in flower. (Dr. Swediaur says the juice is sedative and diuretic, and commendable in dropsy and jaundice. *E.*)

## SYNGENESIA. ÆQUALIS. Leontodon.

*Curt.-E. bot.* 510—*Mill. ill.-Blackw.* 501—*Woodv. p.* 7—*Fl. dan.* 574—*Walc.-Ger.* 228. 1—*H. ox. vii.* 8. row 2. 1—*Dod.* 636. 1—*Lob. obs.* 117. 2, and *ic. i.* 232. 2—*Ger. em.* 290, 1—*Park.* 780. 1—*Pet.* 11. 7—*Matth.* 506—*Fuchs.* 680—*J. B. ii.* 1035—*Trag.* 262—*Lonic. i.* 92. 2—*Blackw.* 1.

(Root spindle-shaped, black. *Fl. Brit. E.*) Leaves varying from wing-cleft, in a very dry situation, to nearly entire in a very moist one. Calyx, scales perfectly smooth. Seeds furrowed longitudinally, sharply toothed upwards. Down on a long pedicle; rays simple. WOODWARD. The notches in the leaves hollowed out like the teeth in a large timber saw. Seeds flat, scored, prickly upwards. Blossom yellow, expanding about five or six in the morning, and closing early in the afternoon.

Common Dandelion. *L. officinale.* WITH. ed. 4. *L. Taraxacum.* LINN. HUDS. RELH. SMITH. ABBOT. Meadows, pastures, road sides, ditch banks, &c. P. April—Sept.

Var. 2. Leaves narrower, fewer, more deeply cloven. Seeds reddish brown. RAY.

*Pet.* 11. 8.

Grows along with var. 1. and flowers most of the summer.\*

Var. 3. *Palustre.* Outer scales of the calyx upright, close to the inner, entire; leaves spear-shaped, very entire, or only toothed.

*E. bot.* 553—*Scop.* 48. at ii. p. 100.

Root-leaves oblong, broader towards the end, pointed with teeth, smooth, mid-rib red. Calyx smooth; outer scales egg-shaped, pointed, somewhat membranaceous at the edge; the inner strap-shaped. LYONS. Calyx, the lowermost scales at first upright, afterwards bent back. HUDSON.

\* Early in the spring, whilst the leaves are yet white, and hardly unfolded, they are an excellent ingredient in sallads. The French eat the roots, and the blanched leaves, with bread and butter. Children that eat it in the evening experience its diuretic effects, hence the origin of a vulgar name both in this country and among other European nations. When a swarm of Locusts had destroyed the harvest in the island of Minorca, many of the inhabitants subsisted upon this plant. The expressed juice has been given, to the quantity of 4 ounces, three or four times a day; and Boerhaave had a great opinion of the utility of this and other lactescent plants in visceral obstructions. Goats eat it; swine devour it greedily; sheep and cows are not fond of it; horses refuse it; small birds are fond of the seeds. The *Phalæna Fascelina* and the *Thrips Physapus* feed upon it. LINN.

(That very learned and accurate botanist Mr. Dawson Turner, appears to have enjoyed most favourable opportunities of remarking this plant, the *L. palustre* of Fl. Brit. LYONS, and RELHAN; the *L. Taraxacon* of WITH. ed. 3 and 4: and he thence infers that it is not specifically distinct from *L. Taraxacum*. He states, "they both grow abundantly in the marshes about Yarmouth, and I constantly remark that though all which are found in the wettest places are clearly *L. palustre*, yet as the soil becomes dry, the scales of the calyx are less erect, the colour is less purple and shining, and the leaves take regularly more and more of a runcinate form, 'till at last they quite lose themselves in the common species. Bot. Guide. p. 441. E.)

Marsh Dandelion. *Hedypnois paludosa*. SCOP. carn. n. 958. *Leontodon Raii*. GOUAN ill. 55. *Leontodon Taraxacum paludosum*. LIGHT. Fl. Scot. 432. *Picris scapo unifloro, foliis glabris semipinnatis, calyce levi*. HALL. hist. n. 26. ST. *Leontodon Taraxacum*  $\delta$  *palustris*. HUDS. and Bot. arr. ed. ii.

Hinton Moor, Cambridgeshire. LYONS. Moist places on the sides of mountains in the Isle of Skye. LIGHTFOOT. (Brome Fen, Norfolk. Mr. WOODWARD. Wet meadows at Barton Bendish. Rev. R. FORBY. E.) P. June—(July. E.)

## (2) *Down sitting.*

*L.* Stem branched; fruit-stalks scaly; leaves spear-shaped-autumnal. Edged, toothed, very entire, smooth; down mostly sitting.

*E. bot.* 830—*Fuchs.* 320—*J. B.* ii. 1031—*Trag.* 265—*Dod.* 639. 4—*Ger. em.* 297. 3—*Lonic.* i. 92. 3—*Ger.* 233. 4—*Dod.* 639. 4—*Lob. obs.* 120. 1, and *ic.* i. 237. 2—*Ger. em.* 296. 2—*Park.* 794. 4—*H. or.* vii. 7. 6—*Matth.* 766—*Pct.* 12. 1.

Root bitten off as in *Scabiosa Succisa*. Flowers opening at seven, and closing at three in the afternoon. It is difficult to say under what genus it should be placed. It differs from *Scorzonera* in its sitting down; from *Crepis* in its simple tiled calyx; and from *Leontodon* in its sitting feathered down. LINN. Down of the seeds of the circumference sitting, those of the centre sometimes on a short pedicle. LEERS. Root in the second or third year dying at the end, appearing as if bitten off. Stems sometimes thrice as tall as the leaves. Leaves spear-shaped, quite smooth; teeth bluntish. Flowering branches nearly of an equal height. Calyx inversely



egg-shaped, tapering downwards, beset with tapering blackish hairs, and a small quantity of cottony substance. *Down* of the central florets sometimes tapering out into a kind of short pedicel; feathered, brownish white, which colour readily distinguishes it from *Hypochaeris radicata*, which it very much resembles, and the others of the same tribe which flower in the meadows at the same time. *St.* *Root* thick, sending out lateral fibres. *Leaves* nearly strap-shaped, smooth; *hairs* simple. *Stem* and *fruit-stalks* slightly scored, smooth. *Fruit-stalks* mostly forked; the scales resembling the outer ones of the calyx. *Calyx*, the outer scales much shorter, upright, a little hairy at the ends; the inner with a row of longish black hairs along the back. *Florets* yellow on both sides. *Style* and *summit* set on the upper part with very short and exceedingly fine, white, bristly hairs. *Down* about the length of the seed, rather longer than the tubular part of the blossom, the feather-like fibres on the hairs extremely fine. *Seeds* compressed, scored.

*Autumnal Dandelion. Yellow Devil's Bit. Hedychnois autumnale.* HUDS. E. bot. Fl. Brit. RELHAN. Meadows and pastures. P. July—Aug.

Var. 2. *Leaves* hairy. RAY.

With variety 1, and with us the most common. *St.*

Var. 3. *Leaves* wing-cleft.

*Ger.* 233. 3—*Pet.* 12. 2.

*Hieracium præmorsum laciniatum.* R. Syn. 164.

Pastures about London.

July—Aug.

Var. 4. *Dwarf.* *Leaves* pointed. PET.

*Pet.* 12. 3.

Hedges about London.

July—Aug.

*Hieracium folio acuto minus.* R. Syn. 164. (ST.)

Var. 5. *Dwarf.* *Leaves* blunt, like those of *L. Taraxacum*. PET.

*Pet.* 12. 4.

With variety 4.

July—Aug.

*hispidum.* L. All the scales of the calyx upright; leaves toothed, very entire, hispid, bristle-like hairs forked.

*Curt.* 314—*E. bot.* 554—*Fl. dcn.* 862. (The figures of the older Botanists are not sufficiently exact to allow of our

knowing whether they intended them for this or for the next species.)

A strap-shaped *floral-leaf* below the flower, which is not in *L. hirtum*. *Florets* of the circumference greenish on the outside. *Down* sitting, feathered. A plant difficult to make out, from the different synonyms referred to by different authors. *Flowers* open at four in the morning, and close at three in the afternoon. LINN. *Leaves* on leaf-stalks, spear-shaped, somewhat hoary; hairs forked and simple. *Seeds* slender, rough, striated, the upper part of the ridges toothed, the lower warty; as long as the down. WOODWARD. *Root* bitten off. *Stalk* six to sixteen inches high. *Leaves* indented toothed. *Hairs* with two or three points, or simple. *Calyx* with simple hairs. *Down* white, with eleven large rays just longer than the seed, with as many intermediate ones. DR. STOKES. The *floral-leaf* mentioned by Linnæus is not always present.

*Rough Dandelion.* *Leontodon hispidum*. LINN. WITH. HULL. RELH. SIBTH. ABBOT. CURT. *Hedypnois hispida*. HUDS. SMITH. RELH. Meadows and pastures. Meadows near Worsley Mill, and near Chaddock Hall, Lancashire. MR. EVANS. [Lulworth Cove, Dorsetshire. St. Vincent's Rocks, Bristol.] P. May—Sept.

Var. 2. *Leaves* entire, with sometimes shallow teeth, spear-shaped, rough. LINN.

*Clus.* ii. 141. 2-*Ger.* em. 302. 3-*Park.* 799. 12-*J. B.* ii. 1038-*H. ox.* vii. 7. 12. row. 2. f. 4-*Pet.* 11. 5-*Ger.* 238. 3. (These figures are cited on the authority of RAY.)

*Dens leonis montanus angustifolius*. R. Syn. 171.—*Leontodon Taraxacum* γ. HUDS.—*Hieracium incanum*, according to Reichard. St.

Near the top of y Glyder mountain near Llanberris.

L. All the scales of the calyx upright; leaves toothed, *hirtum*. hairy; hairs undivided. LINN. Outer row of seeds destitute of down. HALLER.

Curt.—*E. bot.* 555—*Fl. dan.* 901.

Very much resembling *L. hispidum*, but distinct. *Fruit-stalks* and *calyxes* not so hairy, nearly smooth. *Leaves* stiffish,

## SYNGENESIA. ÆQUALIS. Hieracium.

and as it were dry to the touch, and the central parts very much curled when dry; segments slanting; the hairs undivided at the point. *Calyx* nodding before flowering, channeled when the seeds are ripe; the outermost *scales* dilated on each side at the base, with a fold between. *Blossom* the florets of the circumference yellow underneath, and not greenish. LINN. *Stem* six inches high. *Seeds* of the circumference crowned with a shallow leafy ornament, instead of down; those of the centre with a feathered down. HALL. A much smaller plant than the *L. hispidum*, and its calyx is smooth, but the leaves are hairy. In *L. autumnale* the calyx is hairy and the leaves smooth; M. AFZELIUS. The want of down to the outer row of seeds sufficiently distinguishes this plant from its congeners. *Flowers* yellow.

*Deficient Dandelion.* CURT. *Hedypnois hirta*. Fl. Brit. RELH. *Hedypnois hispidum*, *hirtum* β. HUDS. Heaths and commons. [Frequent in Devonshire and Cornwall. Pastures and cornfields in Astley and Tildesley, Lancashire. Mr. EVANS.] P. June—Aug.

**HIERA'CIUM.** *Receptacle* generally naked: *calyx* tiled, egg-shaped; sometimes double: *down* mostly sitting, hair-like: rarely feathered.

(OBS. This genus has been found one of the most intricate even to the more experienced botanists, nor have the means yet been fully discovered of discriminating the intermingling varieties. We have ventured to admit several species which from the authority on which they rest, we presume must be considered as well ascertained; but notwithstanding the labours of Dr. Smith in the Linnæan Transactions and other works, we are still unable positively to rectify the confusion of synonyms which in some of the older species has so long prevailed. E.)

(1) *Stalk* leafless, 1-flowered: *Down* simple.

*Pilosella*. II. *Leaves* very entire, egg-shaped, cottony underneath; *suckers* creeping.

Curt. 279-E. bot. 1093-Fl. dan. 1110-Ludw. 144-Wale.  
 -Blackw. 365-Fuchs. 605-Trag. 278-Lonic. i. 95. 3  
 -J. B. ii. 1039-Park. 690. 2-H. ox. vii. 8. 3-Pet.  
 11. 1-Dod. 67-Lob. 254. 1, and ic. i. 479. 1-Ger.  
 em. 638. 2-Park. 690. 1-H. ox. vii. 8. row. 1. f. 1  
 -Ger. 513. 2.

Blossom red on the outside, opening at eight in the morning, and closing about two in the afternoon. LINN. *Suckers* covered with cotton, and beset with hairs, lying close to the ground, not throwing out flowering stems in the autumn, as *H. dubium* and *H. auricula*. Florets with a broad purple stripe on the under side. WOODWARD. Calyx hairs terminated by black globules. Blossom pale yellow within. (Seeds brown, striated. E.)

Creeping Mouse-ear. Mouse-ear Hawkweed. Very dry meadows, pastures, and walks. P. May—Sept.\*

H. Leaves oblong, entire, toothed; stalk almost naked; alpinum. calyx hairy.

E. bot. 1110-Lightf. 18. p. 434-Allioni 14. 2-Col. ecphr. ii. 30. 1-H. ox. vii. 7. 5-Pet. 11. 2-Ray 6. 2. at. p. 168-(Fl. dan. 27, may possibly be the same plant in a cultivated state, for Mr. Ray tells us it then assumes such an appearance.)

Leaves egg-oblong, slightly toothed, sprinkled on both sides with white expanding hairs. Stalk thick, sprinkled with white hairs, brown at the base. Floral-leaves small, one or two on the upper part of the stalk. Calyx swollen, set with numerous white projecting hairs. Blossom yellow. LINN. Calyx concealed as it were by its hairs. MURRAY. About three inches high. Whole plant set with long hairs, especially the fruit-stalk and the calyx. Leaves oblong egg-shaped, tapering downwards into long leaf-stalks. Fruit-stalks but little longer than the leaves. (Root rather woody. E.)

Mountain Hawkweed. Mountains, near the summits in dry soil. Rocks on Glyder and Trigfylchau near Llauberris, on Ben Croochid and near Loch Awe, and many other of the

\* This differs from the other lactescent plants, being less bitter, and more astringent. It is esteemed hurtful to sheep. An insect of the Cochineal genus (*Coccus polonicus*) is often found at the roots. Act. Upsal 1752. Goats eat it. Sheep are not fond of it. Horses and cows refuse it.



Highland mountains. Llyn y Cwm near Snowdon. PENNANT.  
[On dry rocks on Ben Bourde. On Malghyrdy, Ben Lawers,  
and Lochain y Gair. Mr. BROWN.] P. July—Aug.

Tarax'aci. H. Leaves spear-shaped, toothed, smooth; stalk almost  
naked; calyx hairy.

*E. bot.* 1109—*Retz.* 4. 2—*Allion.* 31. 1.

Doubtful whether a hybrid plant, or a new species. The leaves are so much like those of *L. autumnale*, and the stalk and flowers so exactly like those of *Hieracium alpinum*, that if the stalk and flower of the latter were added to the leaves of the former, a fair specimen of the plant in question would be produced. Leaves, teeth, some shorter, others longish, often bent forwards. Stalk with the minute rudiments of leaves, hairy, thickening towards the flower, swelling at the end like the calyx, with brown hairs. Entirely different from *L. aureum*, the calyx being very much tiled which can hardly be said of *L. aureum* or *autumnale*. LINN. (The fructification of *Taraxac.*, on accurate examination will be found far too dissimilar to that of *T. alpinum*, to allow of the ingenious conjecture that it might prove a hybrid offspring from the latter. E.) Down sitting, feathered, LIGHTFOOT; on whose authority it principally rested as a British plant, (till lately re-discovered by Mr. GRIFFITH. E.)

Alpine Hawkweed. *Hedynois Taraxaci*. VILLARS. Fl. Brit. E. Bot. *Hieraceum Taraxaci*. LINN. WITH. Ed. 2 and 3. HULL. LIGHTF. RETZ. DICKS. *Hedynois autumnale Taraxaci*. HUDS. which see. Sides of mountains in wet ground, but not common in Wales. Ben-na-Caillich mountain in the Isle of Skye. [On Rhiwr Glyder about 100 yards above Llyn y Cwm. Mr. GRIFFITH.]

P. July—(Aug. E.)

(2) *Stalk naked, many-flowered.*

du'bium. H. Leaves entire, egg-oblong; suckers creeping.

*E. bot.* 2332—*Fl. dan.* 1044.

Stem rough with hair. Leaves rough with hair, especially underneath. Larger than *H. Auricula* in all its parts. Occurs but rarely, possibly a mongrel production, or a variety of some species or other. LINN. Stalk smooth, from 6 to 9 inches high,

with 3 to 6 flowers. HUDSON. *Leaves* longer and narrower than in *H. Pilosella*, very slightly concave, hairy on both sides, but more sparingly so than in *H. Pilosella*, green above; greyish, but not cottony underneath. *Stalks* upright, nearly smooth below, with mostly two flowers, rarely one. *Pedicles* equal, straddling, which, as also the *calyxes*, cloathed with hairs terminated by black globules. *Florets* pale yellow on both sides. *Seeds* oval, scored; down sitting, as long as the calyx. Such were the appearances in June and July, but in autumn as follows:—*Suckers* throwing out branches, and terminated by a flowering stem. *Branches* not rooting, with alternate leafy branches. *Stem* drooping at the base, with 5 and 6 flowers. *Fruit-stalks* alternate. *Floral-leaves* spear-shaped, one at the base of each flower, and similar ones on the fruit-stalks. Cultivated some years in my garden. The roots received from the North of England for *H. dubium*. It approaches nearest to that species, and is, I apprehend, that plant, though somewhat varied. Mr. WOODWARD.

*Creeping Hawkweed.* Moistish mountainous situations. Fairfield mountain near Rydal, Westmoreland. (Patterdale. Rev. Mr. RICHARDSON. Coxbench wood, Derbyshire. Dr. JOHNSON. *Bot. Guide.* The genuine plant said to be certainly found in Scotland. *E. bot. E.*) P. July.—Aug.

H. Leaves very entire, spear-shaped; suckers creeping. Auricula.

*Fl. dan.* 1111—*E. bot.* 2368?

*Leaves* spear-shaped, rough with very small hairs. *Stalk* and *calyx* beset with black bristles. Planted in a garden it rose the next year to 3 feet high, with flowers in a kind of umbel on long fruit-stalks. LINN. *Root* bitten off, with numerous simple fibres. *Suckers* leafy. *Stalk* upright, scarcely 6 inches high, somewhat hairy, hairs scattered. *Leaves* mostly very entire, pointed, naked. *Flowers* in a panicle, 3 to 6, yellow. HUDSON.

*Narrow-leaved Hawkweed.* On mountains. On Dalehead not far from Grasmere, Westmoreland. P. July.—(Aug. E.)

(H. Leaves elliptical, entire; stem almost naked, simple, aurantiacum. hairy, bearing a corymbus of many flowers.

*Jacq. austr.* 411—*E. bot.* 1469—*Kniph.* 11—*Col. ecphr.* 2. t. 30.

*Root* creeping, and throwing out many scions. *Stem* a foot high or more, erect, round, very hairy, scarcely bearing one or two small leaves. *Blossom* deep brownish orange colour. *Calyx*

and *flowers-stalk* clothed with long hairs, like those on the leaves or stem. *Leaves* nearly all radical, elliptical, broad, entire, hairy, especially on the rib. *Receptacle* naked. *Seed-down* rough. *Stalk* and *calyx* invested with black glandular hairs. *E. bot.*

*Orange Hawkweed.* This plant, entirely new to the British Flora, has been found truly wild in several woods in Banffshire, as well as at Craigston in the neighbourhood of Turref, by Mr. GEORGE DON. It is not uncommon in gardens. P. July. E.)

(3) *Stem leafy: Down sitting.*

sabau'dum. II. Stem upright, many flowered; leaves egg-spear-shaped, toothed, half embracing the stem, (rough underneath. E.)

*Allion.* 27. 2—*E. bot.* 349—*Fl. dan.* 872—*Pet.* 13. 7—*Gmel.* ii. 14. 2—*J. B.* ii. 1030. 3—*H. ox.* vii. 5. 59.

*Receptacle* in this and *H. umbellatum* naked, but rougher than in the other species. LINN. *Stem* sometimes branched from half or two thirds of the way up; the uppermost branches often springing from one point in manner of an umbel; those below alternate. More distinguishable from *H. umbellatum* by the eye than by the specific differences. In branches where the top of the stem has been bitten off the leaves often assume the figure of those of *H. umbellatum*; add to this, that the fruit-stalks are often congregated in manner of an umbel, as in *Gmel.* ii. 14. 1, and *Fl. dan.* 872. See also variety 4. ST. *Flowers* opening at seven in the morning, and closing between one and two, p. m. *Blossom* yellow. (*Stem* stiff and upright, three feet high, cylindrical, furrowed, rough, scarcely hollow, but spongy within, terminating in a branched, many-flowered, hairy panicle. *Calyx* brownish green, hairy, the lower scales loose. *Seeds* angular, chesnut-coloured, rather rough. *Fl. Brit.* E.)

*Shrubby Hawkweed.* Woods and hedges.

P. Aug.—(Sept. E.)

Var. 2. Leaves covered with a short and just perceptible down. RAY.

*Gmel.* ii. 14. 1—*Pet.* 13. 9.

Moist shady woods. HUDSON. Near Ulswater, Westmoreland. RAY.

Var. 3. Leaves longer, with fewer teeth, one flower only on the stem.

*Pluk.* 37. 3—*Pet.* 11. 6.

On a dry bank at the edge of a wood in a lane leading from Hornhill to Rickmansworth, Hertfordshire. RAY.

Var. 4. Leaves broad spear-shaped, on very short leaf-stalks. St.

*Pet.* 13. 8.

[Perry Wood, near Worcester. St.]

H. Stem upright, panicle terminating; leaves spear-shaped, prenanthoid-embracing the stem, glaucous underneath. des.

*E. bot.* 2235—*Allion.* 27. 1 and 3.

Whole plant more or less hairy, (3 feet high. E.) Leaves fringed with hairs, edged with a few minute distant teeth; dark green above, glaucous green underneath, (numerous, alternate. E.) Flowers numerous, bright yellow, forming a panicle. (Seeds very smooth, brown. E.)

Glaucous-leaved, or Rough-bordered Hawkweed. *Hieracium spicatum*. ALLION. pedem. i. p. 208; but no trivial name could be more improper than *spicatum*, applied to a plant with a large spreading panicle. The glaucous green of the leaves is alone sufficient to distinguish this from all our other species. (This plant differs from *H. denticulatum*, E. bot. 2122, with which it was confounded in Fl. Brit. in having the leaves embrace the stem by their rounded dilated base, and in their singular roughness near the edge, which there forms a bristly border. E. bot. *H. prenanthoides*. Fl. Brit. VILLARS. WITH. Ed. 3 and 4. SYM. HULL. E.)

Found by Mr. DICKSON (and Mr. DONN, E.) in woods in the South of Scotland. Linn. Tr. ii. 288. (In Loch Rannach, Perthshire. Mr. J. MACKAY. Fl. Brit. Willington Ballast Hills, Durham. Mr. WINCH, in Bot. Guide. E.)

P. June—July.

H. Stem panicled; leaves embracing the stem, toothed, paludo'sum. smooth; calyxes hispid.

*E. bot.* 1094—*Allioni* 28. 2 and 31. 2—*Fl. dan.* 928—*Ger.* 236—*Ger. em.* 300—*J. B.* ii. 1033. 1—*J. B.* ii. 1026. 3—*H. or.* vii. 5. 47.

Stem 1 to 2 feet high, hollow, in which it differs from *H. murorum*; furrowed, smooth, generally bright purple at the



base. *Leaves* smooth, alternate, the lower on leaf-stalks, oval-spear-shaped; the upper spear-shaped, deeply toothed towards the base, entire at the summit; the uppermost very entire. *Leaf-stalks* and mid-ribs of the leaves sometimes purple, especially underneath. *Fruit-stalks* smooth. *Flowers* solitary, smaller than in *H. murorum*. *Calyx* scales strap-spear-shaped, with numerous black hairs on the back. **WOODWARD.** *Leaves* notched like those of Dandelion but not so deeply. *Flowers* bright yellow.

*Marsh Hawkweed.* Moist meadows and woods, and sides of rivulets in the mountainous parts of Craven, Yorkshire, and sides of rivers, both in the Lowlands and Highlands. [Hardrow Force in Wensleydale, Yorkshire. **MR. WOOD.** On the West side of the river just below the bridge at Kirkby Lonsdale, Westmoreland. **DR. J. E. SMITH.** Near Rydal, Westmoreland. Messrs. **CROWE** and **WOODWARD.** At the Hermitage near Taymouth. **ST.** Marshy ground at the foot of Pentland hills. **DR. HOPE.**] (Near Barnard Castle, Durham. **REV. J. HARRIMAN.** And Castle Eden Dean. **MR. WINCH,** in *Bot. Guide*. **P. Fl. Brit. E.)—B. July.**

(maculatum.

**H.** Stem branched, many-leaved, cymose; leaves egg-spear-shaped, strongly toothed, the teeth pointing forwards. **E. bot.**

*E. bot.* 2121—*Fl. dan.* 1113.

Taller, and more leafy than *H. murorum* or *sylvaticum*. Has rather elliptical than heart-shaped leaves, whose strong deep teeth point forward, and are by no means radiated. *Leaves* strongly speckled with black. From *H. sylvaticum* it is also distinguished by the cymose, not paniced, growth of its stem; the *flowers* are also larger, more numerous, with a darker, thicker *calyx*, and the whole herbage of a darker green. *Stem* decidedly hollow. **E. bot.**

*Stained-leaved Hawkweed.* *H. sylvaticum.* **Fl. dan. SM.** **Lin. tr. v. ix.** 240 β. *H. murorum* γ. **Fl. Brit.** This plant was brought from Westmoreland in 1781, by Mr. Crowe, from whose garden it has established itself, by seed, in the neighbourhood of Norwich, preserving its original habit and characters. The late Mr. Teesdale also found it growing wild in Yorkshire, and designated it as a new species by the name it now bears. Rocky woods in the North Riding. **MR. TEESDALE.** Rocks by Gordale Scar, Yorkshire. **MR. DAWSON TURNER,** in *Bot. Guide*.

**P. July—Sept. E.)**

H. Stem branched, (panicked; E.) root-leaves egg-shaped *muro'rum*. toothed; stem-leaf smaller.

*E. bot.* 2082—*Barr. ic.* 342—*Tabern.* 504. 2—*J. B.* ii. 1034. 1—*Ger. em.* 304. 1—*H. ox.* vii. 5. 54—*Pet.* 13. 2 and 3—*Trag.* 276—*Mant.* 233—*Pet.* 11. 4.

*Root* simple. *Stem* single, a foot high, of equal thickness, not very strong, beset with hairs, with a single branch, sometimes none. *Root-leaves* on leaf-stalks, somewhat toothed, beset with scattered hairs; *stem-leaves* one or two, on the lower part of the stem, on leaf-stalks, pointed, toothed, reddish underneath. *Flowers* few, opening about six in the morning and closing about two in the afternoon. LINN. *Root-leaves* varying considerably in shape, mostly oval-spear-shaped, narrowing towards the leaf-stalk, and with a few large teeth towards the base, very entire upwards, hairy on both sides, and especially the mid-rib and leaf-stalk; sometimes spotted with large reddish spots. *Stem* cylindrical, solid, firm, slightly scored, reddish towards the base, hairy, sometimes naked, or nearly so, sometimes clothed with leaves, similar to, but smaller than the root-leaves. *Flowers* in a branched panicle. *Floral-leaves* awl-shaped, one to each fruit-stalk. *Calyx*, scales strap-spear-shaped, the lower spreading. *Blossom* yellow. *Seeds* nearly cylindrical, furrowed, smooth, dark purple, as long as the down, which has rays as long as the calyx. WOODWARD. It varies in the root-leaves being sometimes nearly circular, (more or less spotted, E.) and very slightly and sparingly toothed; sometimes oblong-egg-shaped, or egg-spear-shaped and the teeth large. Edge of the leaves hairy. Sometimes the stem bears only a single flower, (and no leaves. E.)

*French Lungwort.* *Golden Lungwort*, or *Wall Hawkweed*. Woods, old walls, shady banks, and balks of cornfields. Bolton Abbey, Craven, Yorkshire. Castle Dinas Brân. Mr. WOOD. Arthur's Seat, Edinburgh. St. (Chedder Cliffs, Somersetshire. Mr. E. FORSTER, in *E. bot.* E.) Conzie Scar, near Kendal. Mr. WOODWARD. P. July.

(Var.  $\delta$ . Fl. Brit. is said to have been discovered on Ben Gloe, and other mountains of Scotland, by Mr. J. MACKAY, who described it with leaves toothed and snipped, not spotted; stems only a span high, hairy, nearly naked; blossoms double the size of those of other varieties; calyx covered with soft hairs, of a black colour.

Mr. Dawson Turner suspects a new species, most resembling *H. murorum*, will be found on the walls of Castleton Castle. E.)

(cerinthoides. H. Stem bearing a corymbus, with leaves hairy, slightly toothed; stem-leaves oblong, half embracing the stem; root-leaves inversely egg-shaped; leaf-stalks bearded with long hairs.

*E. bot.* 2378—*Gouan. ill. t.* 22. *f.* 4—*Villars Dauph. v.* 3. *t.* 32.

This curious addition to the British Flora is another discovery of Mr. G. Don, who states it to be by no means a scarce plant in the Highlands of Scotland, growing upon rocks. For the above notice we are indebted to Dr. Smith's paper on the genus *Hieracium*, published in the ninth volume of *Lin. Trans.* Never having seen specimens of this plant we are unable at present to offer a more full description. E.)

sylvaticum. H. Stem branched, leafy; root-leaves egg-shaped, acute, on leaf-stalks; stem-leaves sitting; fruit-stalks many-flowered. *GOUAN.*

*E. bot.* 2031—*Allioni* 28. 1—*Lob. obs.* 517. 2, and *ic. i.* 587. 1—*Ger. em.* 304. 2—*Park.* 801. 2—*Tabern.* 505. 1—*J. B.* ii. 1034. 3.

Differs from the *H. murorum*, in the root-leaves being spear-shaped and slightly toothed, not egg-shaped, never approaching to wing-cleft at the base; the leaf-stalks being longer, the stem-leaves more than one, and the whole plant considerably larger. Flowers yellow.

Wood Hawkweed. *Hieracium murorum* β. LINN. HUDS. Bot. arr. ed. ii. (Chalky woods, or old park walls. E.) Old Roman Camp at Sidmonton, near Newberry. On the side of the Lake Llyn y Cwm. RAY. (Epping Forest, near Highbeach. Mr. E. FORSTER. E.) [On Dudley Castle Hill, Staffordshire.] P. Aug.

villosum. H. Stem branched; leaves rough with hair; root-leaves egg-shaped, toothed; stem-leaves heart-shaped, embracing the stem.

*Jacq. austr.* 87—*E. bot.* 2379—*Clus.* 141—*J. B.* ii. 1027—*H. ox.* vii. 5. 58.

Stem scored, somewhat hairy; branches as high as the main stem. Root-leaves spear-shaped, broadish, somewhat hairy, teeth

blunt. *Stem-leaves* heart-shaped, embracing the stem, approaching upwards at the base. *Fruit-stalks* one-flowered. *Floral-leaves* rather distant from the calyx. *Calyx* but little tiled, expanding, leaflets unequal in length, set with hairs black at the base, and with a yellow gland at the point, as have all the hairs. *Seeds* black. *Down* sitting, hair-like, in large quantity. LINN. *Root-leaves* very variable in size, the small ones on very long leaf-stalks. *Stem-leaves* sometimes strap-shaped, and not embracing the stem. The whole plant woolly, and when cultivated rising to the height of four feet. *Flowers* large, yellow.

*Shaggy Alpine Hawkweed.* Found by Mr. DICKSON amongst wet rocks on Ben Nevis, Scotland. Linn. tr. ii. 286. [Clefts of rocks near Meer Gill, at the foot of Ingleborough, Yorkshire. Mr. CALEY,] (who since conjectures his plant may prove a new species, unless indeed the *H. alpinum*. E.)

P. Aug.

H. Leaves soft, spear-shaped, nearly entire; lower ones molle. on leaf-stalks; flowers on fruit-stalks nearly forming a corymbus.

*Dicks. h. s.—Jacq. austr. 119—E. bot. 2210.*

*Stem* upright, unbranched, one or two feet high, scored, purplish, leafy, somewhat hairy. *Fruit-stalks* terminating, few, 1 or 2-flowered, one inch and half long. *Leaves* oval, blunt, hairy on both sides, soft, the upper sitting, the lower tapering into leaf-stalks. *Calyx* not tiled. *Leaflets* dark green, hairy, uniform. *Flowers* deep yellow. *Seeds* reddish, scored. It approaches to the *H. murorum*, and sometimes grows along with it, but it differs in the colour of the flowers, the number of leaves on the stem, and is truly distinct. JACQUIN.

*Soft-leaved Hawk-weed.* Found by Mr. DICKSON in the South of Scotland. Linn. tr. ii. 286.

P. July—Aug.

H. Leaves strap-shaped, somewhat toothed, scattered, umbellatum. flowers in a sort of umbel.

*Curt.—Kniph. 9—E. bot. 1771—Pet. 13. 10 and 11—Clus. ii. 140—Dod. 638. 2—Lob. obs. 120. 3. and ic. i. 240. 1—Ger. em. 298. 5—Park. 801. 4—J. B. ii. 1030. 1—Fl. dan. 680—Ger. 234. 6.*

*Leaves* spear-strap-shaped, obscurely toothed. *Flowers* terminating. *Calyx* the outer segments with their points turned



back. LINN. Stem two to four feet high, simple, cylindrical, scored, hollow, nearly smooth, (upright. E.) Leaves numerous, without order, decreasing in size upwards, sitting, strap-spear-shaped, with a few pointed teeth towards the base, edges and ribs slightly hairy. Flowers large, yellow. Fruit-stalks branched, cottony. Floral-leaves awl-shaped. Calyx scales strap-spear-shaped, the outer somewhat cottony, the inner smooth. Seeds cylindrical, smooth, furrowed. Down as long as the calyx. Mr. WOODWARD.

*Bushy Hawkweed.* Hedges and dry shady places. [Ditchingham, Norfolk. Mr. WOODWARD. Ditch banks near Birmingham. St.]—(Woody hills at the back of Thorpe, near Norwich. E, bot. E.)

Var. 2. Leaves smooth, very entire, dark green. DILL. in R. Syn. truly strap-shaped. St.

Pet. 13, 12.

About London, but not common. [Near Bungay, Suffolk, common. Mr. WOODWARD.] July—Aug.

CREPIS. Recept. naked, (very slightly hispid. Fl. Brit. E.) calyx double, the outer one deciduous: down hair-like, sometimes standing on a pedicle.

fœtida.

C. Leaves between notched and winged, rough with hair; leaf-stalks toothed.

E. bot. 406—Col. ecphr. 242—Park. 794. 3—Dod. 641. 3—Lob. obs. 113. 1, and ic. i. 226. 1—Ger. em. 279—H. ox. vii. 44—Pet. 12. 8 and 9—Magn. bot. 129.

Unopened flowers nodding. Leaves smelling like bitter almonds. LINN. rather like opium. RELHAN. Calyx whitish. Down longer than the calyx, on a pedicle. Receptacle somewhat hairy. LEERS. Flowers small, yellow. (Stems spreading, branched, leafy, cylindrical, hairy; the centre one upright. Calyx hairy or woolly. Blossom reddish at the back. Receptacle honey-combed. Seeds slender, yellowish, furrowed, roughish. Fl. Brit. E.)

*Stinking Hawk's-beard.* Dry meadows and pastures. About Cambridge. Banstead Downs, by the side of the road to Dorking, Surrey. Northfleet chalk pits, Kent. Near Greenhithe. [Barton, near Swaffham, Norfolk. Mr. PITCHFORD.]—(Near the sixth milestone from Bury to Newmarket; and Great Saxham. Sir T. G. CULLUM.—Willington Ballast Hills, Durham. Mr. WINCH, in Bot. Guide. E.) B, June—July.

C. Leaves spear-shaped, notched, sessile, smooth; the tecto'rum. lower ones (embracing the stem, E.) toothed.

*Curt.* 327—*E. bot.* 1111—*Walc.—Fl. dan.* 501—*Pet* 12. 6—*Gmel.* ii. 6—*Lob. ic.* i. 239—*Ger. em.* 297. 4—*Park.* 794. 2—*H. ox.* vii. 7. 29—*J. B.* ii. 1024. 1—*Dod.* 636. 3—*Lob. obs.* 115. 1, and *ic.* i. 229. 2—*Ger. em.* 284. 2—*Park.* 777. 2—*J. B.* ii. 1024. 2—*Ger.* 228. 2.

Plant of an ash-coloured green. Stem angular, furrowed. Branches as long as the stem. Root-leaves those of *Leontodon Taraxacum*; stem-leaves those of *L. autumnale*, but with the teeth at the base upright and longer; branch-leaves entire, strap-shaped, somewhat arrow-shaped and rolled back at the edge. Flowers of the appearance of those of the *Lapsana Communis*, never nodding. Calyx furrowed, sprinkled longitudinally with clammy hairs. Styles as soon as they have passed through the anthers, brown, a singular circumstance. The plant, in most other respects, liable to great variations, in point both of structure and appearance, when growing in a rich soil appearing as figured in *Ger.* 228. 2, when in a poor soil it is slenderer, about a foot high, with strap-shaped leaves somewhat toothed, resembling those of *Plantago Coronopus*, [as in *Gmel.* ii. 6. *Str.*] or a hand's breadth high, with leaves jagged like those of *Leontodon Taraxacum*. LINN. Root very long and taper. Stems scored, purplish, often twisted, smooth. Leaves strap-shaped. Stem-leaves with winged clefts embracing the stem. Calyx with black or brownish white hairs, terminating in small transparent globules; outer leaves 5 to 10, not deciduous; inner keeled towards the bottom. Florets yellow on both sides. Down sitting, rather longer than the seeds, and longer than the tube of the blossom.

Smooth Succory Hawkweed, or Hawk's-beard. Meadows, pastures, walls, roofs, road sides. A. June—Sept.

Var. 2. Leaves tapering to a fine point.

*Pet.* 12. 7.

Pastures about London.

July—Aug.

Var. 3. Leaves entire, toothed, either spear-shaped or egg-shaped.

*Pet.* 12. 5.

Pastures about London.

Sometimes the leaves are very entire, scarcely producing a single tooth.

Var. 4. Stems trailing, leaves strap-shaped, very narrow, apparently from the stem having been bitten off in the spring.

Lien'nis.

C. Leaves notched, with winged clefts, rough, toothed above the base; calyx bristly.

*E. bot.* 149—*Kniph.* 6—*J. B.* ii. 1025, 3—*C. B. pr.* 64—*Park.* 793—*H. ox.* vii. 4. 46—*Pét.* 12. 10.

*Stem* angular, rough, four to six feet high, brittle. *Leaves*, all between lyre-shaped and winged, bristly underneath. *Calyx* furrowed, beset lengthwise with soft prickles. *Flowers* closing between three and four in the afternoon. LINN. *Calyx* scales sometimes slightly cottony with only here and there a scattered, short, bristly hair. *St.* *Leaves* at the base of the lowermost flowering branches similar to the leaves below, those at the base of the upper flowering branches strap-spear-shaped. *Flowering branches* spreading, with several flowers. *Flowers* on separate fruit-stalks. *Floral-leaves*, spear-shaped. *Blossom* yellow. *Seeds* furrowed. *Down* sitting, hair-like, extending a little beyond the calyx. WOODWARD. Lower leaves in the larger plants widely notched; the notches hollowed out like the teeth of a large timber saw, or the leaves of the common Dandelion.

*Rough Succory Hawkweed, or Hawk's-head.* Meadows and pastures in a calcareous soil. Road from Sittingbourne to Rochester, and about Northfleet and other places in Kent and Essex. Near Bury. Mr. MATHEW. *Fl. Brit.*—(Sunderland Ballast Hills. Mr. WINCH.—Coast South of Sunderland. Mr. WAUGH.—On the Wolds, West of Bishop Burton, Yorkshire. TEESDALE.—On the Downs near Ewel, Surrey. Mr. T. F. FORSTER, jun.—About Boxhill, near Dorking. Mr. J. WOODS, jun. *Bot. Guide.* E.) B. July—Aug.

(pul'chra.

C. Leaves downy, toothed; those on the stem somewhat arrow-shaped; stem paniced, corymbose; calyx pyramidal, smooth. GOUAN.

*E. bot.* 2325—*Col. ecphr. t.* 249.

*Root* small, taper, branching. *Stem* upright, downy, slender, cylindrical, hollow. *Root-leaves* inversely egg-shaped, thin, downy, toothed most in their lower part, the rest few, small, arrow-shaped, clasping the stem with their toothed base. *Flowers* small, yellow, closing about noon. *Anthers* and *stigmas* brownish. *Scales* at the base of the calyx not deciduous. *Down* of the seed nearly sessile, very slender, minutely toothed. *E. bot.* and some further account may be found in Linn. Trans. v. x. p. 345.

*Small-flowered Hawk's-beard. Hieracium pulchrum. BAUH.*  
 Hist. Found wild by Mr. G. Don, in 1796, amongst crumbling rocks on the hill of Turin, near Forfar, as yet the only known British station. Linnæus reports it to be a native of France and Italy. It is said to vary much in luxuriance.

A. June—Sept. (E.)

**HYO'SERIS.** *Recept.* naked: *calyx* nearly equal: down sitting, like awned chaff, surrounded with hairs, or instead thereof a minute calyx including a very fine down.

**H.** Stem divided, naked; fruit-stalks thickening upwards. *min'ima.*

*E. bot.* 95—*Fl. dan.* 201—*Chus.* ii. 142. 2—*Ger. em.* 288. 8—*Park.* 791. 9—*Pet.* 15. 9—*Gies.* 33—*Ger.* 227. 8—*H.* *ox.* vii. 1. 8.

*Root* small, woody, with a few stiff fibres. *Leaves* spreading in a circle, bluntly oval, tapering into a leaf-stalk, toothed on the sides, entire at the base and end, viewed with a glass slightly hairy, particularly at the edges. *Stalk* 6 to 9 inches high, cylindrical, smooth, reddish and stiff at the bottom, green and hollow upwards, sometimes simple, oftener with 1, and sometimes two branches. *Branches* reddish and wire-like at the base, hollow and thickening upwards, sometimes again branched. *Flowers* nodding before they open, afterwards upright. *Calyx* outer scales small, dry, and shrivelling; the inner very pointed. *Blossom* yellow. *Seeds* oval, scored, crowned with the proper calyx. **WOODWARD.** In some situations much larger, the branches dividing and sub-dividing. **MR. BROWN.**

*Small Swine's Succory. Small Swine's Eye.* Meadows and cornfields in gravelly soil. Common Cornfield, Walthamstow, Essex. Teddington Field, near Hampton. Pensham Field, near Pershore, Worcestershire, in the most barren and gravelly places. **NASH.**—[Cornfields near Norwich. Messrs. **PITCHFORD** and **WOODWARD.**—Sandy cornfields about Forfar. Road from Dundee to St. Andrews. **MR. BROWN.**] A. May—Aug.

**HYPOCHÆRIS.** *Recept.* chaffy: *calyx* somewhat tiled: down on a pedicle; feathered.

**H.** Stem almost bare, with a solitary branch; leaves egg-macula'ta, oblong, entire, toothed.



*E. bot.* 225—*Fl. dan.* 149—*Hall. enum.* 24. 1. at p. 740, and *hist.* 1. 1. at p. 24—*Clus.* ii. 139. 2—*Ger.* 301. 1—*Park.* 799. 13—*J. B.* ii. 1027. 1—*H. ox.* vii. 5. 53—*Pet.* 13. 1—*Ger.* 237. 1—*Hall.* 1. 1. at p. 24.

*Seeds* wrinkled. LINN. *Leaves* spreading on the ground in a circle, oval, toothed at the base, very entire towards the end, fringed, with reddish angular spots, and scattered hairs. *Stem* naked, with one or two strap-shaped scales. *Calyx* outer scales blackish, fringed; the inner smooth, yellowish, half as long as the florets, hairy, composed of large scales. WOODWARD. *Stalk* generally simple, but sometimes with one, two, or three branches. RELHAN. *Blossoms* yellow; opening at six in the morning and closing at four in the afternoon; (large, terminating. *Down* feathery. E.)

*Spotted Cat's-ear.* Mountainous meadows and pastures. Gogmagog Hills, between Triplow Heath and Foulmire, Newmarket Heath, banks of the Devil's Ditch near Reche, and Bartlow, Cambridgeshire. Bernak Heath, Northamptonshire, (but since the time of Ray sought for there in vain, says Morton. E.) [On Omperhead, by Cartmel Wells, very plentiful, along with *Veronica hybrida*. MR. HALL. (About Malham Cove, Yorkshire. DR. SMITH. At the end of Risby Heath, Suffolk, on a chalky bank close to the plantation of Firs. Sir T. G. CULLUM. in *Bot. Guide.* E.) P. July.\*

glabra.

H. Smooth; stem branched, leafless; leaves toothed and indented; calyx oblong, tiled.

*Curt.* 145—*E. bot.* 575—*Fl. dan.* 424—*Pet.* 12. 4—*H. ox.* vii. 4. 35—*Pet.* 11. 12—*Col. ecphr.* ii. 27. 2.

Differs from *H. radicata* in having minute blossoms, and the scales of the calyx being smooth, and the keel not fringed. Whole plant smooth. *Stems* nearly upright, with one or two branches, slender, hollow above, solid below. *Leaves* spear-shaped, indented, toothed. *Fruit-stalks* thickening upwards. *Calyx* like that of *Leontodon autumnale*. *Blossom* yellow, close. *Seeds* of the circumference with the down sitting; those of the centre, down on a pedicle. *Habit* and appearance that of *Leon-*

\* The leaves are boiled and eaten like cabbage. Horses are fond of this plant when green, but they do not like it when dry. Cows, goats, and swine eat it. Sheep are not fond of it. LINN. The country people believe it a cure for tetter, and other cutaneous eruptions, possibly through a vulgar prejudice, founded on its spotted leaves. MR. WOOD.

*don autumnale*. LINN. Stem sometimes simple, in the autumn much branched and reclining, Leaves in a circle round the root, shining; teeth triangular. WOODWARD. Leaves sometimes edged with white hairs. Calyx long, conical; scales smooth, blunt, purplish at the ends.

*Smooth Cat's-ear*. Sandy and gravelly soils. Near Middleton, Warwickshire. Norwich, and about Comb and Kingston, Surrey. Pensham Field, near Pershore, Worcestershire. WASH. On the common, close to the inn at Bank-top, near Barnesley, Yorkshire. Mr. WOOD. Sandy parts of Norfolk and Suffolk. Mr. WOODWARD. (Under Greenwich Park wall on Blackheath. CURTIS. Among turnips at Great Barton, Suffolk. Sir T. G. CULLUM, in *Bot. Guide*. E.) Washwood Heath, near Birmingham. A. June—Aug.

I. Stem branched, naked, even; leaves notched, blunt, radica'ta. rough; fruit-stalks scaly.

Curt. 152—E. bot. 831—Fl. dan. 150—Dod. 639. 2—Lob. obs. 120. 2, and ic. i. 238. 1—Ger. em. 298. 6—Park. 790—H. ox. vii. 4. 27—Ger. 227. 7—Park. 791. 8—Pet. 11. 11—J. B. ii. 1032. 1.

Fruit-stalks thickening upwards. Calyx, keel of the scales ringed. Blossom large, closing at three in the afternoon. LINN. Root-leaves spread on the ground, oblong-wedge-shaped, waved or toothed, hairy. Stem smooth, naked. Branches one or more, thickest under the flower, each with one flower. WOODWARD. Scales spear-shaped, one at the base of each branch, with a few white bristly teeth at the base on each side. Calyx not distended at the base; scales strap-spear-shaped, set along the upper part of the keel with a row of short, taper, dark, purple bristles. Seeds scored, rough; pedicle longer than the seed; down rather longer than the pedicle. Chaff strap-shaped, tapering and yellow towards the top. Blossoms yellow within, reddish green without. (Root spindle-shaped, descending to a great length. E.)

*Long-rooted Cat's-ear*. Meadows and pastures, common. P. May—Sept.

Var. 2. *Smaller*. Stem five or six inches high, simple, or with one flower, nearly sitting, on the side. Mr. WOODWARD.

LAP'SANA. Receptacle naked: calyx double; all the inner scales channeled.

commu'nis. L. Calyxes after flowering, angular; fruit-stalks slender, very much branched; (stem bearing a panicle. Fl. Brit. E.)

*Dicks. h. s.*—*Curt.*—*E. bot.* 844—*Kniph.* 5—*Fl. dan.* 500—*Lob. obs.* 104. 1. and *ic.* i. 207. 1—*Ger. em.* 255—*Park.* 810. 1—*J. B.* ii. 1028—*Dod.* 675. 2—*H. ox.* vii. 1. 9—*Pet.* 14. 12—*Ger.* 231. 8.

*Seeds* all naked, none involved in the scales of the calyx. LINN. *Stem* two to four feet high, stiff, hollow, cylindrical, scored; hairy. *Leaves* alternate; the lower egg-shaped, on leaf-stalks; the upper spear-shaped, higher up strap-shaped, the uppermost awl-shaped. *Leaf-stalks* bordered, the border wing-cleft, and one or two pair of wings, slightly hairy. *Flowering branches* long, naked, or with one or two awl-shaped scales, much branched at the top, each branch with one flower. WOODWARD. *Stem* nearly cylindrical, scored, hairy; the hairs terminated by minute globules. *Branches* smooth. *Leaves* toothed, rough with hair, the lower egg-shaped, on long leaf-stalks, the upper spear-shaped, sitting. *Leaf-stalks* flat, with two or three pair of small unequal wings. *Calyx* rather cylindrical; the outer, scales spear-shaped, closely embracing the base of the inner. *Blossom* yellow; *florets* fifteen to eighteen. *Styles* purplish. *Summit* dark purplish green.

*Common Nipple-wort. Dock Cresses.* Hedges, shady places, and on rubbish. A. June—July.\*

CICHO'RIUM. *Receptacle* somewhat chaffy; *calyx* double: down about 5 teeth, indistinctly hairy.

In'tybus. C. Flowers in pairs, sitting; leaves notched.

*E. bot.* 539—*Fl. dan.* 907—*Woodv.* 248—*Curt.* 241—*Blackw.* 177—*Walc.*—*Dod.* 635—*Lob. obs.* 114. 1, and *ic.* i. 228. 2—*Ger. em.* 284. 1—*Park.* 776, 2—*H. ox.* vii. 1. row. 2. 2—*Fuchs.* 679—*J. B.* ii. 1008—*Trag.* 272—*Lonic.* i. 94. 1—*Ger.* 235. 10—*Matth.* 503.

\* As a curative for sore breasts (from whence the old English name is derived,) it is now entirely in disuse. At Constantinople it is eaten raw, just before flowering.

Flowers open at eight, a. m. and close at four, p. m. LINN. Stem angular, (two to three feet high, upright, straight. Root spindle-shaped, fleshy, white. E.) Stem-leaves spear-shaped, embracing the stem, toothed towards the base, fringed with bristly hairs terminating in globules. Flowers in the blossom of the upper leaves. Calyx outer, scales six, bent back, about half as long as those of the inner, set on the outside and edges with whitish hairs terminated by small globules; inner, scales skinny, set along the back with similar hairs, woolly at the ends. Blossom of a fine blue; individuals with five or six semi-transparent lines, a little woolly on the outside. Cylinder of anthers striped blue and white. German edged with little teeth. Summits blue. Seeds oblong, with four corners, crowned with a small greenish cup edged with numerous white skinny teeth. Chaff short, spear-shaped.

Wild Succory, or Endive. Borders of cornfields. [Tampworth Castle.] P. July—Aug.\*

ARC'TIUM. Calyx globular: scales with hooked points, bent inwards.

A. Leaves heart-shaped, without thorns, on leaf-stalks. Lap'pa.

E. bot. 1228.—Kniph. 3.—Ludw. 106.—Curt. 238.—Woodv. 15.—Matth. 1154.—Lob. obs. 318. 2, and ic. i. 588. 1.—Ger. 664. 1.—Park. 1223. 1.—Dod. 38.—Lob. obs. 318. 1, and ic. i. 587. 2.—Ger. em. 809. 1.—Pet. 23. 1.—Fuchs. 72.—J. B. iii. 570.—Trag. 837.—Blackw. 117. 1.—H. ox. vii. 32. 1.—Lonic. i. 64. 2.

Heads with a very slight woolliness, not so broad as those of var. 2, nor so round as the varieties with woolly heads. The most common of all. RAY. Leaves, the lower on long leaf-stalks, waved at the edges; the upper egg-spear-shaped. Mr. WOODWARD. Stems reddish. Stems and leaves with short white soft bristles. Fruit-stalks from the bosom of the leaves; Calyx scales green and fleshy at the base, purple towards the top, keeled, ending in long stiff awns, yellow at the hooked ends. Blossom tube white; border red. Anthers bluish pur-

\* The leaves, when blanched, are eaten early in the spring in sallads. They lose their bitterness by cultivation. The roots, gathered before the stem shoots up, are eatable, and, when dried, will make bread. Sheep, goats, and swine eat it. Cows and horses refuse it.



ple. *Style* white. *Summits* expanding, white. *Seeds* oblong, angular, somewhat flattened. (*Stem* nearly four feet high, upright, with wide-spreading branches, leafy, cylindrical, furrowed, slightly hairy. *Fl. Brit. E.*)

*Burdock. Common Burr.* Road sides, rubbish, and ditch banks. B. July—Aug.

Var. 2. Heads roundish, rather larger, brownish, purple, covered with a whitish cotton. Blossom purple. Stem dark red. RAY.

*Mill. ic.* 159—*Blackw.* 117. 2—*Fl. dan.* 642—*Pet.* 23. 5—*Matth.* 11. 155—*H. ex.* vii. 32. 2.

Road sides and rubbish.

Var. 3. Heads quite smooth, very large, an inch in diameter, green. Blossom purplish.

New Cross, Kent. RAY.

Var. 4. Heads small, smooth, of the size of a hazel nut, broadish at the base, brown. Blossom purple. RAY.

*Pet.* 23. 3.

Var. 5. Heads the size and colour of those of var. 4, rounder, brown or purplish, and with a considerable quantity of cotton. RAY.

*Pet.* 23. 4—*J. B.* iii 571. 1.

Near Halifax, Yorkshire. RAY.

Var. 6. With leafy heads. PLUK.

*Pet.* 23. 2.

About London. Aug. PET. DILL.\*

\* Before the flowers appear, the stems, stripped of their rind, may be boiled and eaten like asparagus. When raw they are palatable with oil and vinegar. —A decoction of the roots is esteemed by some very sensible physicians, as equal, if not superior to that of Sarsaparilla. —Boys catch bats, by throwing the prickly heads into the air. —Cows and goats eat it. Sheep and horses refuse it. Swine are not fond of it.

The *Phalana Humuli* feeds upon the roots, and the Mottled Orange Moth upon the stems. LINN.—A horse eat the leaves, and has been observed to eat the heads. STOKES.

**SERRA'TULA.** *Calyx* nearly cylindrical, tiled:  
scales not awned.

**S.** Leaves (serrated, E.) lyre-shaped and wing-cleft; the terminating segment very large; florets all alike. tinctoria.

*Fl. dan.* 281—*E. bot.* 38—*Ger.* 577. 3—*Matth.* 945. 1—*Clus.* ii. 8. 1—*Dod.* 42. 3—*Lob. obs.* 288. 2, and *ic.* i. 534—*Ger. em.* 713. 1—*Pet.* 22. 6—*J. B.* iii. 23. 2—*Park.* 475. a.

Leaves fringed. *Receptacle* bristly. LINN. Stem two to three feet high, firm, four-cornered, scored, smooth. Leaves sometimes entire, mostly wing-cleft, alternate, half embracing the stem; wings spear-shaped, sharply serrated, or rather toothed, woolly above, and at the edges and veins underneath. Flowers single or in clusters, terminating or on the branches. *Calyx* scales numerous, slightly cottony at the edges, the upper rather longer. Blossom purple. Down yellowish, shining, hairy. WOODWARD.

Common Saw-wort. Woods, pastures.

P. July—(Aug. E.)

Var. 2. Blossoms white.

[Alconbury, five miles from Huntingdon, on the North road. Mr. WOODWARD.]

Var. 3. All the leaves entire. Mr. Wood.

*Kniph.* 2—*Ger.* 576. 1—*Matth.* 945. 2—*Clus.* ii. 8. 1—*Dod.* 42. 3—*Lob. obs.* 288. 2, and *ic.* i. 534. 1—*Ger. em.* 713. 1—*Pct.* 22. 5—*Park.* 475.

Var. 4. Lower leaves entire, the upper part cut. HALL.

*Ger.* 576. 2.

Var. 5. All the leaves jagged, HALL; wing-cleft, without the large terminating segment. Wings spear-shaped, serrated.\*

\* This plant is very much used by the dyers to give a yellow colour; but is inferior to the Reseda, therefore its use is confined to the coarser woollen cloths.—Goats eat it. Horses are not fond of it. Sheep, swine, and cows refuse it.

alpina.

*S.* Calyxes somewhat hairy, egg-shaped; leaves undivided, (woolly underneath). *Fl.*

*E. bot.* 599—*Lightf.* 19, *at.* p. 449—*Pluk.* 154. 3—*Gmel.*

*Root-leaves* egg-spear-shaped, serrated, the serratures not ending in bristles but expanding, smooth above, woolly and whitish underneath. *Stem-leaves* seven to ten, spear-shaped, very entire, nearly sitting. *Stem* undivided, a span high. *Flowers* eight to twelve, in a broad-topped spike terminating the stem. *Calyx* oblong, nearly cylindrical. *LINN.* About five inches high, *Stem* cottony. *Leaves* six or seven, cottony underneath. *Flowers* about six, terminating, blue. *Down* stiff and strong; feathered.

*Alpine Saw-wort.* On the highest rock of Snowdon; and on Brearcliff, near Burnley, Lancashire, *MERRET.* Sides of the Highland Mountains, and near Moffat, in Anandale. *LIGHTFOOT.* [On the highest rocks of Caernarvonshire, as Clogwyn y Garnedd. On Crib y Ddeseil, in places scarcely accessible. *MR. GRIFFITH.*] (Castle, and near Church, Bewcastle, Cumberland. *HUTCHINSON. E.*)

*P. Aug—Sept.*

*Var. 2. cynoglossifolia.* Leaves spear-shaped, narrow. *HALL. LIGHTFOOT.*

*Fl. dan.* 37—*Dill. elth.* 70—*Gmel.* ii. 32.

Near a rivulet on the rock Rhiw'r Glyder above the lake Llyn y Cŵn near Llanberys, Caernarvonshire. *RAY.*

**CARDUUS.** *Calyx* bellying, tiled; scales thorny: receptacle hairy.

(1) *Leaves decurrent.*

palustris.

*C.* Leaves toothed, thorny at the edge; flowers in bunches, upright; fruit-stalks without thorns.

*E. bot.* 974—*Gmel.* ii. 23. 2—*H. ox.* vii. 32. 13—*Pet.* 21. 4.

*Fruit-stalks* without thorns. *Calyx* closely tiled, smooth, the points of the scales being hardly discernible. *Down* feathered. LINN. *Stem* five to six feet high and upwards, upper part and branches slender and with few leaves. *Calyx*, scales woolly, green, tipped with deep purple, without a rib along the back, ending in a short expanding thorn not pungent; inner pointed, without thorns. *Blossom* segments even with the anthers, shorter than the pistil. *Down* shorter than the blossom; rays fringed with long hairs. WOODWARD. *Blossom* purple; sometimes white.

*Marsh Thistle.* Marshy meadows and moist shady places, [and wet clayey pastures. WOODWARD.]

(B. Fl. Brit. E.) P. July.

Var. 2. *cristatus*. A monstrous variety, with a broad flat stem and head of flowers.

*Stem* three quarters of an inch broad. Cluster of flowers two inches and a half broad, the upper edge crowned with a continued line of florets, so as to give it the appearance of the *Cockscomb Amaranthus* of the gardens. St.

It grew in the middle of a pasture. The root produced the same singular variety for two years together.\*

C. Leaves indented, thorny at the edge; calyxes on fruit-stalks, solitary, upright, woolly; (scales strap-shaped, recurved. E.)

Curt.; *C. polyacanthos*-E. bot. 973-Jacq. austr. 249-Lob. ic. ii. 21-Tabern. 1080. 1-Ger. 1010. 1-Ger. em. 1173. 1-J. B. iii. 59-H. ox. vii. 30. 11-Pet. 21. 2.

*Stem* with white elevated long lines. *Leaves* halberd-winged, and sprinkled underneath with white upright hairs, as in *C. crispus*. *Fruit-stalks* with a leafy thorny border, in which it differs from *C. crispus*. *Flowers* smaller than those of *C. nutans*, larger than those of *C. crispus*. Differs from *C. nutans* in its calyx being upright, from *C. crispus* in its calyx being solitary and woolly. *Calyx* inner scales expanding. *Florets* cloven half way down, the lowermost segments separated nearly to the base, so as to give the floret the appearance of having two lips, an upper one four-cleft, and a lower one undivided, which is not the case in *C. nutans* or *C. crispus*. *Styles* as long again as the florets. LINN. *Stem* solitary, three or four feet high;

\* This, and almost all the other species of this genus, may be eaten like the Burdock, before the flowers are formed. Swine eat it; horses are very fond of it; cows refuse it.



angular, the angles edged with a border running down from the leaves. HUDSON. *Stem* leafy, edged with a border set with numerous stiff yellow thorns of various lengths. *Leaves*, the lower wing-cleft; wings broad, blunt, somewhat five-cornered, with five imperfect lobes, the terminating one very broad and blunt, cottony underneath, above smooth, excepting a few short hairs arising from glandular warts; ribs ending in sharp yellow thorns; those above pointed, wings triangular, confluent. *Flowers* sitting, crowded together, pointing upwards, sidewise, and downwards; sometimes in branched bunches, terminating the branches, on short fruit-stalks upright or open. *Calyx* scales spear-shaped, yellowish green, the upper expanding, the innermost chaffy, all tipped with sharp thorns. *Blossom* segments somewhat longer than the anthers, which are even with the pistil. *Down* nearly as long as the blossom, hair-like. WOODWARD. Scales of the calyx scarcely thorny, not close as in the *C. palustris*. CURTIS. *Flowers* purplish red, sometimes white.

*Curled, or Welled Thistle. C. crispus.* HUDS. *C. polyanthos.* CURT. The *C. crispus* of Linnæus I believe has not been found in these islands.

Ditch banks, on rubbish, borders of cornfields. [Plentifully on banks and under walls near Yarmouth, and also in waste places far from the coast. I had it growing for some years without variation. Mr. WOODWARD. Road sides about London. St.] A. June—Sept.

*tenuiflorus.* C. *Leaves* thorny at the edge; branches straight, flowers in clusters, sitting; calyxes nearly cylindrical, scales upright but open, pungent.

*Curt.-E. bot.* 412-J. B. iii. 56. 1. (not 516 as in *Fl. Lond.*)-*Park.* 982. 5-H. ox. vii. 31. 13.

*Stem* and *branches* quite straight, cottony upwards; bordered, borders thorny. *Leaves* cottony underneath. *Calyxes* oblong-conical; scales upright, spreading at top, long, narrow, ending in a yellow thorn as long as the florets. CURTIS. *Flowers* pale purplish red. (Plant four feet high. E.) *C. acanthoides.* HUDS. WITH. Ed. 2. Great confusion about this and the preceding species, has been occasioned by the synonyms given to the *C. acanthoides* in the *Fl. suec.* being misplaced, for, except the reference to *It. scan.* they really belong to this plant, reading *Bauh. hist.* iii. p. 56, instead of 59, and *Moris. hist.* iii. p. 153, instead of p. 15.

*Slender-flowered Thistle.* Hedges, ditch banks, and under walls; very common near London. (Between Edinburgh and Leith. Dr. SMITH. Near Redcar, Yorkshire, common. Rev. J. DALTON. Frequent on the coast of Suffolk and Sussex. About Dorchester, and Bensington, Oxfordshire. SIBTHORPE. Common about Newcastle, Northumberland. Mr. WINCH in *Bot. Guide.* E.) (A. Fl. Brit. E.) P. July—Aug.

C. Leaves with winged clefts, hispid; segments straddling; calyxes egg-shaped, thorny, woolly; stem hairy.

*E. bot.* 107-*Fl. dan* 1173-*Tabern.* 1078. 2-*Ger.* 1011. 6-*Ger. em.* 1174. 6-*Park.* 982. 9-*H. ex.* vii. 31. row. 1. 7-*Pet.* 21. 7-*J. B.* iii. 58. 1.

*Calyx* innermost scales without thorns, bristle-shaped, dry. LINN. *Stem* angular, cottony, frequently purple. *Leaves* half embracing the stem, cottony and sea-green underneath, hairy and deep green above; wings spear-shaped, the terminating one long, the side ones mostly divided to the base into two segments, one pointing upwards, the other downwards, terminating, as do also the wings of the part running down the stem, in sharp stiff white thorns, which are extensions of the ribs. *Calyx* with numerous ranges of spear-shaped scales, somewhat cottony, ending in sharp stiff white thorns, the inner strap-shaped, pointed, not thorny. *Blossom* purple. *Down* feathered, almost as long as the blossom. WOODWARD. It varies from two to five feet high, or more.

*Spear Thistle.* Rubbish, road sides, and other waste places. B. July—Aug.\*

C. Leaves decurrent half way down towards the next below; thorny; fruit-stalks crooked; calyx, scales expanding upwards.

\* Few plants are more disregarded than this, and yet its use is very considerable. If a heap of clay be thrown up, nothing would grow upon it for several years, did not the seeds of this plant, wafted by wind, fix and vegetate thereon. Under the shelter of this other vegetables appear, and the whole soon becomes fertile. The flowers, like those of the Artichoke, have the property of curdling milk. Sheep and swine refuse it; neither horses, cows, nor goats are fond of it. The *Papilio Cardui* and the Thistle Ermine Moth feed upon it. LINN.

*Fl. dan.* 675-*E. bot.* 1112-*H. or.* vii. 31. row 1. 6-*Pet.* 21. 1-*J. B.* iii. 56. 3.

*Fruit-stalks* with one flower. *Flowers* sweet-scented in the night. *Styles* bent back towards the sides. *LINN.* *Stems* two to three feet high, scored, cottony. *Branches* alternate. *Fruit-stalks* terminating, cottony, particularly that which terminates the stem. *Leaves* with winged-clefts; wings egg-shaped, with strong thorns. *Calyx* scales spear-shaped, cottony, with the rib running along the back terminating in a thorn, the lowermost bent back, the inner without thorns. *Down* hair-like, nearly as long as the florets. *Mr. Woodward.* (*Flowers* smell strongly of musk in warm weather; their drooping posture distinguishes them from our other thistles. *E. bot. E.*) *Stem, leaves, and calyxes* overspread with a cobweb kind of woolliness. *Calyx* globular, flattened; scales very strong, horizontal when the flower is expanded, purplish towards the end, terminating in a strong yellow thorn. *Blossom* tube whitish, border purple. *Filaments* woolly. *Pollen* grey, globular, set with fine points.

*Musk Thistle.* Pastures, (waste ground, and fallow fields. *E.*) In a calcareous soil. [Road sides in a sandy or gravelly soil. *Stokes.* Marlborough Downs.] A. June-July.\*

(9) *Leaves sessile.*

(*arven'sis*. *C.* *Leaves* wing-cleft; thorny; stem paniced; calyx egg-shaped, armed with small spines; down feathery. *E.*)

*Kniph.* 6-*E. bot.* 975-*Fl. dan.* 644-*Col. ecphr.* i. 46-*Ger. em.* 1173. 4-*Park.* 959. 7-*H. or.* vii. 32. 14-*Pet.* 21. 5-*J. B.* iii. a. 59. 2.

It has the habit of a *Carduus*. *LINN.* The down of the seed is very long, (feathery, deciduous, not permanent, as in *Serratula*. *E. bot. E.*) *Blossom* pale purple, (rarely white. *Root* creeping, and descending deep into the earth, very tenacious of life, and difficult to extirpate. *Stems* upright, three feet high, leafy, cylindrical, smooth, bearing many flowers. *Leaves* sitting, scarcely decurrent, alternate. *Fl. Brit.* We follow the arrangement of Curtis, since adopted by Dr. Smith in removing this plant from the genus *Serratula*; which indeed seems to have been the intention of Linnaeus himself.

\* (The down of this plant may be advantageously used as a material in the making of paper. *E.*)



*Creeping Thistle. Way Thistle. Carduus arvensis.* CURT.  
 SIBTH. RELH. Fl. Brit. *Serratula arvensis.* LINN. HUDS.  
 WITH. Ed. 3 and 4. RELH. ed. 1. HULL. SYM. SYN. ABBOT.  
 MART. Fl. Rust. *Carduus vulgarissimus viarum.* RAIL. GER.  
 em. P. July. E.)\*

(C. Leaves embracing the stem, halberd-shaped and wing- maria'nus.  
 cleft; thorny; calyx without any leaves near it;  
 thorns channeled, and set with other little thorns.

*Kniph.* 1-Curt. 148-E. bot. 976-Blackw. 79-Ludw. 35-  
*Fuchs.* 56-J. B. iii. a. 52. 2-Trag. 850-Lonic. i. 70. 2-  
*Ger.* 989-Pet. 21. 9-Dod. 722. 1-Lob. obs. 479. 1, and  
*ic.* ii. 7. 2-Ger. em. 1150-Park. 976. 1-H. or. vii. 30.  
*row* 2. 1. f. 4-Matth. 676.

(Stem four to six feet high, leafy, cylindrical, scored, smooth.  
 E.) The leaves are generally ornamented with broad and beau-  
 tifully white veins, though they are sometimes entirely green.  
 The large purple blossom and the strong thorns of the calyx,  
 an inch or more in length, sufficiently distinguish this from other  
 indigenous species.

*Milk Thistle.* Ditch banks and road sides, borders of corn-  
 fields, and on rubbish. A. Aug.†

C. Leaves with winged clefts pointing two ways, every erio'phorus.  
 other segment upright; calyxes globular, woolly.

*Jacq. austr.* 171-E. bot. 386-Clus. ii. 154-Dod. 723-Lob.  
*obs.* 482. 1, and *ic.* ii. 9. 2-Ger. em. 1152-J. B. iii.  
*a.* 57-Park. 978-Mill. *ic.* 293.

Stem two feet high, branched, flowering the second year.  
*Calyx* as large as an egg; points of the scales strap-shaped, ho-  
 rizontal, entire, with a cobweb-like wool interwoven. *Leaves*,  
 every other segment pointing downwards. LINN. Stem four or

\* It is said to yield a very pure vegetable alkali when burnt. Goats eat  
 it; neither cows, horses, sheep, or swine are fond of it. LINN. Horses some-  
 times eat the young tops. Str. (The pappus may be employed as an useful ingre-  
 dient in the making of paper. E.)

† This is eaten when young as a sallad. The young stalks peeled,  
 and soaked in water to take off the bitterness, are excellent. The scales  
 of the cup are as good as Artichokes. The root is good to eat early in the  
 spring.



five feet high, angular, scored, woolly, much branched. *Root-leaves*, one to two feet long, wings distant, with two lobes, unequal, the larger strap-shaped, the lesser spear-shaped, very entire, but fringed with a few fine thorns; mid-rib stiff, extending out into a sharp thorn; above green, with numerous short stiff hairs pressed closely; underneath with a thick, woolly, white down. *Stem-leaves* embracing the stem; lobes not so regular, all spear-shaped, the terminating one long. *Fruit-stalks* slender, extremely cottony. *Calyxes* clustered, terminating the stem and branches; scales strap-spear-shaped, terminated by a long softish thorn, covered and interwoven with a thick cottony wool. *Anthers* extending beyond the blossom. *Style* much longer than the anthers. *Summit* very slightly cloven. *Seeds* large, whitish, nearly oval, without ridges. *Down* feathered, shorter than the blossom. **WOODWARD.** *Calyx* scales ending in a yellow thorn. *Blossom* purple, or white.

The large lobes of the leaves pointing alternately horizontally and downwards, distinguish this plant at first sight.

*Woolly-headed Thistle. Friar's Crown.* Both in flat and mountainous meadows and pastures. **RAY.** Bredon Hill, Worcestershire. **NASH.** [By the road side between Stamford and Grantham, plentifully. **Dr. J. E. SMITH.** About Ripton, Huntingdonshire. **Mr. WOODWARD.** Hillend Bank in Longdon Parish, Worcestershire. **Mr. BALLARD.** On the foot way between Clarkton Leap and Kemsey, Worcestershire. **ST.** Near Truro, Cornwall.] (Hedge and quarry at Fulwell, near Sunderland. **Bewcastle, Cumberland. HUTCHINSON. E.)**

**B. July—(Aug. E.)**

*pratensis.*

**C.** Leaves spear-shaped, ragged and edged with unequal prickles; cottony underneath; stem cottony, generally with one flower and 2 leaves; (calyx woolly. **E.)**

**E. bot.** 177—**Pet.** 22. 1—**Clus.** ii. 148. 1—**Ger. em.** 1183. 1—**Lob. obs.** 314. 4, and **ic.** i. 583. 1—**Park.** 961. 3—**J. B.** iii. 45. 2.

*Root* fibrous and creeping. *Stem* one and a half to two feet high, soft, cob webbed or cottony, cylindrical, generally unbranched and supporting a single flower, but sometimes a branch terminated by another flower rises from the bosom of the upper leaf. *Root-leaves* four or five, oblong-spear-shaped, ragged at the edge, and fringed with softish prickles unequal in size, not forming regular teeth, as represented in most of the

figures. — *Stem-leaves* generally two, sometimes only one, half embracing the stem; the upper not prickly at the edge, but terminated by a long soft thorn. All the leaves green, and more or less hairy above, grey and cottony underneath. *Calyx*, scales thick and strong, cobwebbed or cottony at the edges, terminating in a soft thorn. *Blossom* red. *Anthers* with five horny, yellow, spear-shaped points. *Summit* cylindrical, blunt, not notched at the end. *Down* feathered. (Mr. WOODWARD observes that this plant varies with two, three, or even four flowers; these distant, alternate. When more than one flower, the second overtops the terminating one. E.)

*Meadow Thistle. Single-headed Thistle. Cirsium anglicum.* R. Syn. 193. *C. heterophyllum.* LIGHTF. 456. RELH 306. *Carduus pratensis.* HUDS. WITH. Ed. 3 and 4. HULL. SIXTH. Fl. Brit, &c. A species wholly unknown to Linnæus. Dr. SMITH. Moist meadows and pastures, not uncommon. [Near Heydon, Norfolk. BRYANT. Swampy meadows near Robinson's End, Malvern Chase, Worcestershire. Mr. BALLARD.—Meadows between Pucklechurch and Mangots field, plentiful. Mr. SWAYNE.—(Wortham, Suffolk, abundantly. Mr. WOODWARD.—Houghton Moor, Yorkshire. TEESDALE; and between Goule and Thorne, with *Selinum palustre* and *Myrica Gale.* Rev. W. WOOD.—Castle Eden Dean; and South shore of the Tyne. Mr. WINCH, in *Bot. Guide.* E.)—Woods in the Isle of Wight. P. May—June.

C. Leaves embracing the stem, spear-shaped, (either entire or jagged, woolly underneath; stem mostly supporting a single flower, E.) fringed with small, unequal thorns. *heterophyllum.*

*E. bot.* 675—Hall. 7. v. i. p. 77—Mill. 94—Clus. ii. 148.  
2—Ger. em. 1183. fig. 2d—Park. 961. 5—J. R. iii. 46. 2—  
*Pet.* 22. 2.

(Root creeping, knotty, black. *Stem* three feet high, erect, seldom divided, with one, or sometimes two flowers, leafy, cylindrical, furrowed, woolly. *Leaves* on the upper surface very smooth, cottony, white beneath; *root-leaves* on leaf-stalks; *stem-leaves* alternate, numerous, at the base heart-shaped, embracing the stem. *Blossom* terminating, nodding, at length becoming upright, large, purple, with a peduncle elongated, cottony, either woolly, naked, or bearing only a small leaf at the end under the flower. *Calyx* egg-shaped, slightly pubescent, scales spear-shaped, erect, naked at the point, keeled, brownish, terminated by an indistinct little spine. *Anthers*

whitish. *Stigma* strap-shaped, protruding, purple, notched at the end. *Down* of the outer seeds rough, of the inner ones feather-like. *Fl. Brit.*

*C. heleneoides* of Linnæus differs materially, having a stem twice as high, many more leaves, altogether, undivided, and four or more much smaller flowers, sitting, at the very top of the stem. Dr. Smith states that he has never seen this species either wild or cultivated in Britain. E.)

(*Melancholy Thistle. Carduus heterophyllus*. LINN. *Fl. dan.* E. bot. *C. heleneoides*. HUDS. LIGHTF. WITH. Ed. 3 and 4. HULL. *C. Britannicum Clusii repens*. RAILL. *Syn. BAUH. hist. MILL. E.*) Mountainous pastures in Yorkshire, Westmoreland, Cumberland and Wales. Coppice near Giggleswick, in Skirrieth Wood, and in the pastures about Bordley, near Malham. CURTIS.—[Mill Gill near Askrig in Wensleydale, and Skirrieth Wood near Ingleton, Yorkshire. MR. WOOD.—Mulbarton, near Norwich. MR. CROWE.—Between Shap and Orton, Westmoreland. WOODWARD.—About Hamsterley and Witton, Durham. MR. ROBSON.] P. July—(Aug. E.)

acaulis. C. Stemless; calyx smooth.

E. bot. 161—Jacq. *ic.* iii. 579—*Fl. dan.* 1114—*Clus.* ii. 156. 1—*Lob. obs.* 480. 3, and *ic.* ii. 5. 1—*Ger. em.* 1158—*Park.* 969. 4—*J. B.* iii. a. 63. 1—*H. or.* vii. 32. 12—*Pet.* 21. 6—*Barr.* 493—*Trag.* 852—*Lonic.* i. 68. 1.

A dwarf plant, but spreading to the breadth of a foot. LINN. *Root-leaves* spreading in a circle close to the ground; on leaf-stalks; wing-cleft; wings irregularly lobed, and waved, angular, thorny at the edge, green on both sides, hairy towards the base. *Flowering-heads* one or more, rarely sitting. *Fruit-stalks* one to two inches high, hairy. *Calyx*, lower scales short, oval-spear-shaped, upper spear-shaped, stiff, without thorns. *Blossom* even with the anthers. *Style* longer. *Summit* deeply cloven. *Seed* very small. *Down* long, feathered. WOODWARD. *Blossom* purple. Mr. Relhan informs me that he once found a plant on Gogmagog hills with a stem five inches high, bearing three flowers, and a leaf similar to the root-leaves under each flower. An appearance which it generally assumes when cultivated in a garden. (Dr. Smith remarks that other stemless Syngenesian plants are equally liable to similar variation. E.)

*Dwarf Thistle.* Mountainous and rocky dry pastures, especially in a calcareous soil. (But too common in many fields, and upland grounds, in Dorsetshire. PULTENEY. E.) Black-



heath, near London. Dry heaths and commons in Norfolk, very frequent. Dr. J. E. SMITH. Mr. WOODWARD.—Dry heaths on the Western side of the county of Durham. Mr. ROBSON.] P. July.\*

**ONOPORDON.** *Recept.* like a honeycomb:  
*calyx* bellying: scales sharp-pointed.

O. Calyx scales expanding, their points standing out; Acan'thium. leaves egg-oblong, indented.

*Curt.* 334—*E. bot.* 977—*Fl. dan.* 909—*Fuchs.* 57—*J. B.* iii. a. 54. 2—*Trag.* 858—*Dod.* 721. 2—*Ger.* em. 1174. 5—*Park.* 979. 1—*Pet.* 21. 10—*Lonic.* i. 71. 2—*Ger.* 988. 1 and 2—*Dod.* 721. 1—*Lob. obs.* 476. 1, and *ic.* i. 1. 1—*Ger.* em. 1149. 1—*H. ox.* vii. 30. row 2. 1—*Matth.* 671—*Lonic.* i. 70. 3—*H. ox.* vii. 30. row. 1. 1.

*Plant* of a hoary green. *Stem* with a straight leafy border running up to the calyx. *Calyx* scales expanding, awl-shaped. *Blossom* sometimes white. LINN. *Plant* generally covered with a white cotton, giving it a whitish green colour. *Leaves* oval-spear-shaped: the lower extremely large, with deep triangular teeth, which are again toothed, and each tooth terminated by a sharp whitish thorn, being productions of the ribs; the upper spear-shaped with a few distant teeth. *Stem* leafy, border irregularly toothed, and thorny, the thorns proceeding through and strengthening the border. *Heads* single, upright, terminating. *Calyx* scales ending in sharp thorns. WOODWARD. (*Stem* upright, about five feet high. *Flowers* terminating, solitary, erect, purple. E.)

*Common Argentine.* *Cotton Thistle.* On rubbish and road sides, (on a gravelly soil. E.) [Road from Worcester to Droitwich, near Henlip. Mr. BAKER.] B. July—(Aug. E.)†

**CARLI'NA.** *Calyx* radiated: the scales next the blossoms long, coloured.

\* Cows refuse it. It kills all plants which grow beneath it, whence it is very injurious in meadows. LINN. The different species afford nourishment to the *Cassida viridis* and *nebulosa*: *Papilio Cardui*; *Cicada cornuta*; *Cimex Cardui*; *Musca solstitialis*; and *Aphis Cardui*.

† The Receptacle, and the young stems, may be boiled and eaten like Artichoke.—The ancients thought this plant a specific in cancerous cases.—Cows, sheep, and horses refuse it. (The seeds yield a favorite food for the smaller birds. E.)



vulgaris.

C. Stem with many flowers in a corymbus; flowers terminating; rays of the calyx yellow white; (outer ones wing-cleft. E.)

*Fl. dan.* 1174—*E. bot.* 1144—*Matth.* 669—*Clus.* ii. 156. 2—*Dod.* 739. 2—*Lob. obs.* 489. 1, and *ic.* ii. 20. 2—*Ger. em.* 1159. 1—*Park.* 981—*Fuchs.* 121—*J. B.* iii. a. 81. 2—*Trag.* 859—*Dod.* 728. 1—*Lonic.* i. 68. 2—*Ger.* 997. 1.

Root long, spindle-shaped, with a few stiff fibres. Stem 12 to 15 inches high, swelling just above the root, cylindrical, ribbed, purple, slightly downy, dividing above like an umbel. Leaves very numerous, clothing the whole stem and decreasing in size upwards, the lower sitting, the upper embracing the stem, deeply toothed, the teeth armed with numerous yellow thorns; those at the base of each branch, larger than the upper stem-leaves; those of the branches smaller than the stem-leaves, the uppermost join and form the lower ones of the calyx. Calyx scales purplish, edged and terminated with branching yellow thorns; the innermost strap-shaped, pointed at the end, dry, fringed with long hairs towards the base, straw-coloured within, without reddish brown towards the base, but straw-coloured at the point. Blossom segments spear-shaped, purple, straw-coloured below. Seed woolly; down sitting, rays nine to twelve, generally eleven, either single, or with two or three clefts, fringed with long hairs. Receptacle, the chaff longer than the florets. WOODWARD. Blossom tube white, border in the outer florets purple, in the inner whitish. Down pale brown, thrice as long as the seed; rays nearly equal, awl-shaped at the base, a little above it generally dividing into three and sometimes four bristle-shaped branches. The structure of the down and chaff indicates the clearest proofs of a natural generic difference. STOKES. (The whole plant, after having perfected its seeds, turns white and shrivels, in which state it often remains through the winter or even second year: as Linnaeus observes, a mournful spectacle! E.)

*Wild Carline Thistle.* Dry meadows and pastures.

B. June.\*

**BIDENS.** Recept. chaffy: down rough with straight awns: calyx tiled.

\* The flowers expand in dry, and close in moist weather. They retain this property a long time, and therefore are employed as hygrometers—it is said to be an excellent remedy in hysterical cases. *Aman. Acad.* III. p. 64. Goats eat it. Cows refuse it. LINN. Its presence indicates a very barren soil. Mr. WOODWARD.

B. Leaves spear-shaped, embracing the stem; flowers on cernua. crooked fruit-stalks; seeds upright.

Curt. 192—Fl. dan. 841—E. bot. 1114—J. B. ii. 1074—Ger. 574

—Pet. 20. 6—Lob. adv. 227, and ic. i. 529.

Leaves with distant serratures. Flower-leaves very entire. Seeds with four awns, two of which are larger. WOODWARD. Stem a little hairy, (two feet high, branched. E.) Leaves opposite. Calyx segments egg-spear-shaped, with black lines. Blossom and summits yellow. Anthers brown. Germen pyramidal, with four corners; awns four, with prickles pointing downwards. (Flowers bent downwards, sometimes radiated, and thus distinct from *Coreopsis*. E.)

Nodding Double-tooth. Water Agrimony. Wet ditches, marshy places. A. Aug.—(Sept. E.)

Var. 2. Flowers with radiated florets in the circumference.

Fl. dan. 841—Barr. 1209—H. ox. vi. 5. 22.

Frequently on the same plant with var. 1. WOODWARD, as in the lower part of the figure in the Flora Danica.

*Coreopsis Bidens*. LINN. In England, and very frequent in Ireland. R. Syn. 187. n. 2. About Tarporley and other places in Cheshire. HUDSON. [Norfolk, but not common. At Ditchingham. Mr. WOODWARD.]

Var. 3. Dwarf!

Fl. dan. 312, (the left hand figure and the dissected floret.)

Ray. 7. 2.

Seems to differ in no other respect than in its dwarfish growth, and wanting the serratures on the leaves, which probably would appear if the plant acquired a more expanded growth in a moister atmosphere. Var. 2 is probably only an unusual degree of expansion from a very moist atmosphere.

*B. minima*. LINN. In the fish pond on the moor near Somerset Bridge, Surrey. DILL. in R. Syn. [In a splashy rivulet at the bottom of Tittensor common, Staffordshire; and also near Birmingham. St.] A. [Oct. St.]

B. Leaves 3-cleft; seeds upright; (calyx leafy at the base. tripartita. Fl. Brit. E.)

Curt. 237—Blackw. 519—E. bot. 1113—Pet. 20. 7—Dod. 595. 1

—Ger. em. 711. 1—Park. 595. 7—H. ox. vi. 5. 20.

*Leaves*, segments deeply serrated, the middle one much the largest. *Calyx* scales oval, fringed with hairs, the inner smooth, with yellow membranaceous edges. *Seeds*, awns sometimes 3. Mr. WOODWARD. *Flowers* terminating, yellow, (nearly upright. *Stem* upright, two or three feet high, branched, expanding, leafy, bluntly 4-sided, furrowed, smooth. *Leaves* opposite, smooth. *Florets* uniform, tubular, yellow. *Fl. Brit. E.*)

*Trifid Double-tooth*, or *Bur Marygold*. *Water Hemp*. Marshy and watery places. A. Aug—(Sept. E.)

Var. 2. *Dwarf*.

*Fl. dan.* 312, (*right hand figure*.)

Only a starved plant, but its upright flower and the incipient divisions on the leaves sufficiently shew to which species it belongs.

**EUPATORIUM.** *Recept.* naked: *down* feathered: *calyx* oblong; *tile*: *style* long, cloven half way down.

*canna'binum*. *E.* *Calyx* 5-flowered; leaves with finger-like divisions.

*E. bot.* 428—*Fl. dan.* 745—*Blackw.* 110—*Fuchs.* 265—*J. B.* ii. 1065. 2—*Trag.* 491—*Lonic.* i. 241. 2—*Matth.* 1015—*Dod.* 28. 2—*Lob. obs.* 285. 1, and *ic.* i. 528. 2—*Ger. em.* 453. 2—*H. ox.* vii. 13. 1—*Park.* 395.

*Stem* three or four feet high, branched. *Leaflets* mostly three, sometimes five, spear-shaped, sharply serrated at the base, and towards the point very entire. *Calyx* scales few, strap-shaped. *Seeds* black, scored, smooth, little more than a line long. *Down* sitting, hair-like, when viewed with a glass finely toothed, not three lines long. Mr. WOODWARD. *Stem* reddish, rather cylindrical, slightly woolly. *Leaves* serrated, slightly woolly. *Calyx* skinny, coloured, a little hairy. *Florets* five and six. *Blossom* purplish red, sometimes white; clefts shallow. *Styles* and *summits* with a tinge of red. *Germen* with minute shining globules.

*Hemp Agrimony*. *Water Agrimony*. Banks of rivers and brooks.

P. July—Aug.

Var. 2. *Leaves* single, egg-spear-shaped.

\* (A dye may be prepared from this plant to stain cloths yellow. E.)

This is the seedling plant of early flowers the first year; the second year, as I have frequently observed, it has fingered leaves.  
Mr. WOODWARD.

Near Lee, in the road to Eltham. DILL. [Near Bungay, Suffolk. Mr. WOODWARD.]\*

**SANTOLINA.** *Recept.* chaffy: down none: calyx tiled, hemispherical.

S. Flowers forming a corymbus; leaves oblong, blunt, maritima. scalloped, very downy. E. bot.

*Dicks. h. s.*—*E. bot.* 141—*Mill.* 135—*J. B.* iii. a. 157. 2—*Pet.* 29. 8—*Lob. adv.* 201. and *ic.* i. 480. 1—*Ger.* 516—*Clus.* i. 329. 3—*Dod.* 65—*Ger. em.* 640. 3—*Matth.* 860—*H. ox.* vi. 4. 47.

(Root descending to a great depth, branched. Stems lying down, brittle, cylindrical, leafy; branches upright. Leaves numerous, alternate. Stigma protruding. *Fl. Brit. E.*) Whole plant cottony. Leaves spear-shaped, scalloped, blunt. Chaff as long as the calyx. Seeds 2-edged, down-less, whence it should seem to be rather a species of *Santolina*. LINN. Blossom bright yellow.

*Sea Cotton-weed.* *Athanasia maritima*. LINN. On the sea shore. Near Abermeney Ferry in Anglesea; and between Penzance and St. Michael's Mount, Cornwall. Isle of Shepey; and near Poole, Dorsetshire. [On the Devonshire coast.] (On the beach just above high-water mark, one mile North of Land-guard fort, Suffolk. Dr. SMITH. E.) P. Aug.—Sept.

## SUPERFLUA.

**TANACE'TUM.** *Recept.* naked: down none: calyx hemispherical, tiled: florets of the circumference 3-cleft, narrow-strap-shaped; sometimes wanting.

\* An infusion of a handful of it vomits and purges smartly. An ounce of the root in decoction is a full dose. In smaller doses the Dutch peasants take it as an alterative, and as an antiscorbutic. Goats eat it. Cows, horses, sheep and swine refuse it. (Dr. Swediaur recommends the root as a diuretic serviceable in Dropsy. E.)



vulga're.

T. Leaves doubly winged, cut, serrated.

*Woodv.* 115—*Kniph.* 2—*E. bot.* 1229—*Ludw.* 22—*Fl. dan.* 871—*Dod.* 36. 1—*Lob. obs.* 432. 1, and *ic.* 749. 1—*Ger. em.* 650. 1—*Park.* 81. b.—*H. ox.* vi. 1. row 1. 1. f. 1—*Pet.* 20. 9—*Blackw.* 464—*Fuchs.* 46—*J. B.* iii. a. 131. 2—*Ger.* 525. 1—*Trag.* 158—*Matth.* 908—*Lonic.* i. 151. 3.

The *florets* of the circumference sometimes appear in warm summers. LINN. *Flowers* in a corymbus, yellow; those *hermaphrodite* 5-cleft; *females* 5-cleft. RELHAN. *Stem* frequently reddish. *Leaves* winged, leaflets wing-cleft, wings spear-shaped, deeply and acutely serrated. WOODWARD. (*Stems* upright, two feet high, scored, scarcely hairy. *Leaves* alternate, embracing the stem. *Leaflets* of the calyx blunt, skinny at the edge. E.)

*Common Tansy.* Mountainous meadows and pastures. Banks of rivers and swampy places. [Banks of the Inwell and other places about Manchester. Mr. CALEY. Banks of the Dove. Mr. PITT. Between Piper's Hill and Bridgewater, and in Devonshire, frequent.] (Plentiful on Newmarket Heath, Cambridgeshire. E.)

P. June.

Var. 2. Leaves curled.

*Ger.* 525. 2—*Dod.* 36. 2—*Lob. obs.* 432. 3, and *ic.* i. 749. 2—*Ger. em.* 650. 2—*Park.* 81. a—*J. B.* iii. 132.

Ray informs us that this variety was first observed in England. [It grows by the Tees near Conniscliffe, Durham. Mr. ROBSON.]\*

ARTEMIS'IA. *Recept.* either slightly hairy or naked: *down* none: *calyx* tiled; the scales roundish, closing: *florets* radiate, none.

(1) *Stems trailing before the time of flowering.*

campe'stris. A. Leaves many-cleft, strap-shaped; stems trailing, rod-like.

\* This is a warm deobstruent bitter, and its flavour not ungrateful.—The tender leaves are sometimes used to give a colour and flavour to puddings.—If a dead animal substance be rubbed with this plant, the flesh fly will not attack it.—The Finlanders obtain a green dye from it. Cows and sheep eat it. Horses, goats, and swine refuse it. It gives nourishment to the *Aphis Tanacetii*, and *Chrysomela Tanacetii*. LINN. The seeds are an excellent vermifuge.

*E. bot.* 338—*Fl. dan.* 1175—*Ger.* 948. 5. *Abrot. camp.*—*J. B.* iii. a. 194. 2—*Pet.* 20. 4—*Dod.* 33. 2—*Lob. obs.* 442. 3, and *ic.* i. 767. 2—*Ger.* 1106. 5—*Park.* 94. 7—*Matth.* 852—*Lonic.* ii. 23. 2.

Branches simple, alternate, from the bosom of the leaves, somewhat drooping. *Flowers* solitary, pointing one way. The female florets mostly 9, the hermaphrodite 8. *Summits* orbicular, glass-shaped. *Receptacle* naked. LINN. *Stems* numerous, angular, declining, much branched. *Leaves*, the upper frequently simple, very narrow. *Heads* very small, scarcely more than a line broad, numerous, single, either sitting or in short branched spikes. *Calyx* scales few, bluntly egg-shaped, approaching, green, slightly downy at the back, the edges membranaceous, whitish, shining. *Florets* not longer than the calyx. WOODWARD. *Leaves* thread-shaped, from a quarter to one inch or more in length. *Flowers* axillary. *Blossom* reddish brown. (*Stems* about two feet long; *plant* nearly scentless. *Root* spindle-shaped. E.)

*Field Southernwood.* Banks of cornfields and road sides at Elden, Suffolk, and a mile from Barton Mills on the road to Lynn. [Near Thetford, on the side of the road to Norwich. Mr. WOODWARD.] (On Icklingham heath, near Bury. Sir T. G. CULLUM. *Fl. Brit.* E.) P. July—(Aug. E.)

A. *Leaves* many-cleft, cottony: bunches on crooked *maritima*. fruit-stalks; female florets 3; (receptacle naked. E.)

*E. bot.* 1706—*Ger.* 940. 1—*Pet.* 20. 2 and 3—*Lob. ic.* i. 755. 1—*Ger. em.* 1099. 1—*H. ox.* vi. 2. 20—*H. ox.* vi. 2. 19.

Whole *plant* of a snowy white. *Flowering-branches* crooked. The female flowers in the circumference, but three. *Receptacle* naked. The *seeds* seldom ripen in gardens. LINN. Whole *plant* white with thick cotton. *Leaves* vary much in their division; the upper generally simple, strap-shaped, blunt. WOODWARD. *Blossom* brown. (*Calyx* woolly on the outside, skinny at the edge. E.)

(In page 1706 of *E. bot.* are described what are considered by some botanists as two distinct species of *Artemisia*, viz. *A. maritima* and *A. gallica*, which latter, the *A. maritima* γ of *Fl. Brit.* Dr. Smith states to be more properly represented by plate 1001 of *E. bot.* The sole distinction, originally suggested by Willdenow, seems to be the *drooping* or *upright* flower, and which we suspect to exhibit every gradation. E.)

Var. 2. *Segments* of the leaves very short.

SYNGENESIA: SUPERFLUA. *Artemissia*.

J. B. iii. a. 177-Barr. 460.

*Sea Southernwood. Sea Wormwood.* Seashores. [Yarmouth, and elsewhere on the coast. Mr. WOODWARD.—Sea coast between Rampside and Barrow. Mr. GOUGH.—Isle of Walney. Mr. ATKINSON.—(Garston, near Liverpool. Mr. SHEPHERD. E.)

P. Aug.—Sept.\*

(2) *Stems upright, herbaceous: leaves compound.*

*Absinthium*. A. Leaves compound, many-cleft; flowers somewhat glo-  
bular, pendent; receptacle woolly.

*Kniph.* 4-E. *bot.* 1230-Ludw. 76-Woodw. 120-Blackw. 17-  
*Matth.* 685-Dod. 23-Lob. obs. 433. 2, and ic. i. 752. 1-  
*Ger. em.* 1096. 1-Park. 98. 1-H. or. 1, row. 3. 1-*Ger.*  
937. 2-*Trag.* 335-*Ger.* 937. 1-Pet. 20. 1-J. B. iii. a. 168-  
*Gmel.* ii. 63.

*Receptacle hairy.* LINN. *Leaves* cottony on both sides, green above, white and shining underneath, the upper with three clefts, or simple, sitting, bluntly spear-shaped. *Calyx*, scales bluntly egg-shaped, green, and cottony at the back, the edges membranaceous. *Receptacle*, down as long as the florets. WOODWARD. *Stems* scored, whitish, with very short down. *Leaves* silky and very soft; segments blunt, and the lower on long flat leaf-stalks. *Spikes* upright. *Flowers* turned downwards. *Leaves* dark green on the upper, but white on the under surface. *Blossom* brownish white. (*Root* rather ligulous, branched. E.)

*Wormwood Southernwood. Wormwood.* Road sides, rocky places and on rubbish. P. Aug.†

\* This in its wild state smells like Marum or Camphor, but in our gardens it is less grateful, though still much more so than the next species. It is used as an ingredient in distilled waters, and beat with thrice its weight of fine sugar it is formed into a conserve. Its virtues are the same with those of the next species, but in a weaker degree. Horses eat it; cows, goats, and sheep refuse it.

† The leaves and flowers are very bitter, (and used by the country people in some parts of Wales as a substitute for Hops. E.) The roots are warm and aromatic. A considerable quantity of essential oil rises from it in distillation. This oil is used both externally and internally to destroy worms. The leaves, put into sour beer, soon destroy the ascendency. They resist putrefaction, and are therefore a principal ingredient in antiseptic fomentations. An infusion of them is a good stomachic, and with the addition of fixed alkaline salt, a powerful diuretic in some dropsical cases. The ashes afford a more pure alkaline salt than most other vegetables, excepting Bean stalks, Broom, and the larger trees. In the *Amen. Acad.* v. ii. p. 160, Linnaeus mentions two cases, wherein an essence prepared from this plant, and taken for a considerable time, prevented the formation of stones in the kidneys or bladder; the



A. Leaves wing-cleft, flat, cut, cottony underneath; *vulgaris*. bunches simple, bending; florets of the circumference 5.

*E. bot.* 978—*Fl. dan.* 1176—*Ludw.* 153—*Blackw.* 431—*Woodw.* 121—*H. ox.* vi. 1. row! 2. 2. f. 3—*Matth.* 848—*Dod.* 33. 1—*Lob. obs.* 441. 1, and *ic.* i. 764. 2—*Ger. em.* 1103. 1—*Park.* 90 and 91. 2—*Ger.* 945. 1. 2—*Fuchs.* 44—*J. B.* iii. a. 184. 3—*Trag.* 344—*Lonic.* i. 151. 1.

*Receptacle* naked. LINN. *Stem* angular, scored, often red, downy above. *Leaves*, above green and slightly cottony; underneath white with thick cotton; wings oval-spear-shaped, deeply serrated, almost lobed, the terminating one large, with three lobes. *Calyx*, scales extremely woolly; edges not membranaceous. *Florets* longer than the calyx. WOODWARD. *Stems* ascending, branched, scored, reddish purple. *Leaves* dark green and smooth above, cottony and whitish underneath. *Fruit-stalks* alternate, from the bosom of the leaves. *Blossom* purplish.

(A variety more entirely green is not uncommon. E.)

*Mugwort. Southernwood.* Borders of fields; ditch banks, and on rubbish. P. Aug.\*

(3) *Leaves* simple, undivided.

A. Stem-leaves spear-shaped, entire; root-leaves many-cærulescens. cleft; female flowers 3; (receptacle naked. E.)

patients forbearing the use of wine and acids. It might be suspected that, like other bitters, its long continued use must weaken the action of the nervous system, but in these instances no such effect took place. An infusion of it given to a woman that suckles, makes her milk bitter. It gives a bitterness to the flesh of sheep that eat it.—Horses and goats are not fond of it; cows and swine refuse it. LINN. Turkeys are fond of it. Mr. HOLLEFEAR. A horse eat it. The plant steeped in boiling water, and repeatedly applied to a bruise, will remove the pain in a short time, and prevent the swelling and discolouration of the part. Str.

\* In some countries it is used as a culinary aromatic. A decoction of it is taken by the common people to cure the ague. The Chinese make use of it in healing wounds, applying the fresh plant bruised. OSBECK i. 394. A drachm of the leaves powdered, was given four times a day, by Dr. HOME, to a woman who had been affected with hysteric fits for many years. The fits ceased in a few days. In this patient Assafœtida and Ether had been given to no purpose.—Sheep and swine refuse it; neither horses, cows, nor goats are fond of it. LINN. Dr. Anderson informs us, that sheep are very fond of it, devouring it with great greediness, especially the roots, which seem to form a most delicate morsel. The *Aphis Absinthii* and the *Phalena Gamma* live upon the several species.



SYNGENESIA. SUPERFLUA. *Gnaphalium*.

*H. ox.* vi. 1. 5—*Dod.* 26. 2—*Lob. obs.* 441. 2, and *ic.* i. 765.  
2—*Ger. em.* 1104. 3—*Matth.* 687—*Ger.* 946.

*Leaves* woolly on both sides. *Flowers* cylindrical, nodding. *Florets* of the circumference 3. Hence its very close affinity to *A. maritima*, from which, however, it differs totally in its leaves. LINN.

*Bluish Southernwood*, or *Mugwort*. Sea shores. Near Boston, in Lincolnshire; (Mr. Tofield. HUDSON, not found there by any one else. E.) P. Aug.

**GNAPHA'LIUM.** *Receptacle* naked: down hair-like, or feathered: *calyx* tiled: *scales* roundish, skinny, and coloured at the edge.

(1) *Herbaceous; yellow-flowered.*

lu'teo-al'bum. G. *Leaves* sword-shaped, half embracing the stem, serpentine at the edge, blunt, downy on both surfaces; flowers crowded close together.

*Dicks. h. s.—E. bot.* 1002—*Kniph.* 1—*Pluk.* 31. 6—*Barr.* 367—*J. B.* iii. a. 160. 5—*Pet.* 18. 5—*Ger.* 522. 3—*Clus.* i. 329. 1—*Ger. em.* 643. 13—*Park.* 686. 6—*H. ox.* vii. 11. row 2. f. 3—*Lob. ic.* i. 485. 2—*Park.* 688. 9.

(*Stems* spreading at the base, thence upright, undivided, leafy, cylindrical, bearing broad-topped-spikes, many-flowered. *Flowers* terminating, crowded together, thickly woolly at the base. *Fl. Brit. E.*) *Plant* very woolly. *Calyx* yellowish, white, soft; scales egg-spear-shaped. *Female florets* in the circumference numerous. LINN. *Florets of the circumference* with only pistils; in the centre a few with stamens and pistils. HALL.

*Everlasting. Jersey Cudweed.* Dry banks and walls in the island of Jersey, very common. *R. Syn.* Sea coast of Wales. *GER. em.* West sea coasts. *PARK.* (A mile above the first of Bognor Rocks. BLACKSTONE. Mr. RELHAN has lately found this uncommon plant in the road between Hanxton and Little Shelford, Cambridgeshire, certainly wild, and also in a gravel pit in the same neighbourhood. E.)

A. July—Aug.

(2) *Herbaceous; white-flowered.*

G. Leaves strap-spear-shaped, tapering, alternate; stem branched towards the top; flowers in a corymbus. *margarita-ceum.*

*E. bot.* 2018—*Munt.* 614. 170—*Chus.* i. 327. 3—*Ger. em.* 641. 8—*Pet.* 18. 3—*Kniph.* 12—*J. B.* iii. a. 162. 2—*Park. par.* 373. 3.

*Female florets few, HALLER. Stem extremely cottony, white. Leaves numerous, strap-spear-shaped, long, sitting, growing without order, very entire dark green and naked above, underneath greenish white, with a thick cotton. Flowering branches with numerous crowded heads at the end, on short branched cottony fruit-stalk, with a middle one sitting. Calyx bluntly egg-shaped, white, not cottony. Down simple, sitting, as long as the calyx. WOODWARD.*

*American Cudweed: Pearly Everlasting. Meadows, pastures and banks of rivers. In a meadow near Bocking, Essex, and on the banks of Rymny river, Monmouthshire, for the space of at least twelve miles. Such are the habitats given by Ray and repeated by Hudson, but the former seemed to doubt its being a native; (we learn from Fl. Brit. that it has however, recently been discovered by the Rev. Mr. Butt, near a rivulet in the heart of Wire Forest, Worcestershire, and by Dr. Salt in a meadow at Longdon, near Lichfield. E.) It is frequent in our gardens. P. Aug.*

G. Runners trailing; stem undivided; flowers in a simple corymbus; male and female flowers on distinct plants. *dioicum.*

Male plant.—*E. bot.* 267—*Dod.* 68. 1. 2—*Lob. ic.* i. 483. 1. 2—*Ger. em.* 640. 4 and 5—Female plant.—*E. bot.* 267—*Lightf.* 20. 1. at p. 471—*Ludw.* 163—*Kniph.* 3—*Chus.* i. 330. 1—*Dod.* 68. 3—*Lob. ic.* i. 483. 3—*Ger. em.* 641. 6—*Park.* 690. f. 5—*Pet.* 18. 4—*Fuchs.* 606—*J. B.* iii. a. 162. 3—*Lonic.* i. 95. 2—*H. ox.* vii. 11. row 3. f. 2—*Trag.* 332—*Garid.* 30. at p. 168—*Ger.* 516. 4, 5, 6—*Lob. adv.* 202. 2, and *ic.* i. 482. 2.

In the barren plants the heads almost globular: in the fertile ones nearly cylindrical. LINN. I believe it is rarely that ripe seeds are produced, as is the case with many plants which creep at the root. Root woody, brown, with a few stiff fibres.

*Runners* several, creeping; leafy, from the crown of the root. *Root-leaves* in a thick tuft, oval at the end, tapering below into a long leaf-stalk, green and slightly hairy above, underneath white with a thick cotton; *stem-leaves* numerous, strap-shaped, half embracing the stem, green above, white and cottony underneath. *Stems* upright, simple, three to seven inches high, white, cottony. *Heads* three to eight, on short fruit-stalks. *Calyx* scales blunt, the outer short, green, cottony; the inner widening upwards, long, smooth, shining, white, frequently tinged with purple; in the barren plants shorter. *Seeds* short; *down* sitting, with simple rays, that of the female plants longer than the calyx, that of the male plants not exceeding the calyx. **WOODWARD.** *Blossom* white, purple, reddish.

(A larger variety with leaves broader and woolly on both sides has been sent from the Isle of Skye by Mr. J. MACKAY. *Fl. Brit. E.*)

*Cat's-foot. Mountain Cudweed.* Dry mountainous pastures in the North of England, Wales and Cornwall, and on Newmarket Heath not far from Bottesham Beacon. [Canham Heath near Bury, Swaffham Heath, Stratton Heath, Norfolk. Mr. PITCHFORD. Abundantly on the North and West side of the county of Durham. Mr. ROBSON.] (Race Ground near Scarborough. Mr. TRAVIS. E.) P. May—June.

### (3) *Herbaceous: resembling the Filagos.*

*sylvaticum.* **G.** Stem undivided, upright; leaves spear-shaped, narrowing at the base: flowers in a crowded terminating leafy spike.

*E. bot.* 913—*Fl. dan.* 254.

Differs from the *G. rectum* in having broader leaves, and a short clustered spike of black flowers. **LIGHTFOOT.** *Leaves* more attenuated at the base, and less naked on the upper surface than in *Gn. rectum*. **Dr. SMITH.** (*Stem* solitary, undivided, three to five inches high, woolly, leafy. *Down* stiff and rough. *Receptacle* somewhat honey-combed. *Fl. Brit. E.*)

*Highland Cudweed. Gn. Norvegicum.* **RETZ.** and *Fl. dan.* *G. Sylvat.* var. **LIGHTF.** Woods on mountains in the Highlands of Scotland. (On mountains to the North of Blair in Athol, above Loch Erruch, and Ben Wyvis in Ross-shire, but not in woods. Mr. J. MACKAY in *Fl. Brit.* About Brampton, Cumberland. **HUTCHINSON.** E.) P. Aug.

G. Stem upright, terminating in a leafy compound-spike; leaves strap-spear-shaped, almost naked on the upper side. E. bot. rec'tum.

E. bot. 124—Pct. 18. 6—Lob. adv. 202. 1, and ic i. 482. 3.

G. angl.—J. B. iii. 160. 1—Matth. 828. 2—Ger. 515. 1—Ger. em. 639. 1—H. ox. vii. 11. 1.

Leaves green and hairy above, white and cottony underneath; root-leaves long, strap-spear-shaped, very narrow, in open ground forming a thick tuft; stem-leaves strap-shaped, embracing the stem, numerous. Stem in woods frequently solitary, twelve to eighteen inches high, in open ground several from one root, shorter, often at first declining, but very soon ascending. Flowers in a long bunch. Flower-stalks very short, lateral, from the bosom of the leaves, with one to five or more flowers, the lowermost somewhat distant, the upper crowded. Flower-leaves similar to, but smaller than the stem-leaves. Heads very small. Calyx bluntly oval, greenish at the base, yellowish brown upwards, smooth, with shining edges; the outer short, the inner as long as the florets. Seeds minute; down sitting, as long as the calyx; rays simple. WOODWARD. Stem sometimes only three inches high. Hermaphrodite florets three. Down hair-like. St. Leaves narrow, sharp, downy underneath. Calyxes white, shining. Blossom yellowish.

Upright Cudweed. Pastures and woods in a sandy soil. Rough pastures near Fladbury, Worcestershire. NASH. [On the great Island in Winandermere. Armingdale Wood near Norwich. Mr. WOODWARD. Sandy heath a mile from Shiffnal on the road to Wolverhampton. Banks of the canal in the parish of Coseley, Warwickshire. St. Pastures and woods in the county of Durham. Mr. ROBSON. Lanes about Mottershall, Staffordshire.] P. Aug.

G. Stem undivided, trailing; flowers scattered. sup'num.

Dicks. h. s. —E. bot. 1193—Lightf. 20. 2. at. p. 471—Scop. 57. at. ii. p. 152—Bocc. rar. 20. 1. at. p. 41.

Flowers mostly female, but a few in the centre hermaphrodite. LIGHTFOOT. Root-leaves strap-spear-shaped, slightly hairy above, underneath cottony, and greenish white, one half to three quarters of an inch long, in tufts; stem-leaves sitting, narrower and longer. Stem one and a half to three inches high. Heads three and four, alternate, either sitting, or on short cottony fruit-stalks, from the bosom of the upper leaves, which



SYNGENESIA. SUPERFLUA. *Gnaphalium*.

are not longer than the heads. *Calyx* scales spear-shaped, with a green longitudinal line at the base; the tips and edges shining, of a brownish yellow. *Seeds* elliptical; *down* sitting, rays simple, as long as the florets and longer than the calyx. Specimen from Dr. Smith gathered on Ben Lomond. Mr. WOODWARD.

*Dwarf Cudweed. Gnaphalium alpinum.* LIGHTFOOT. Dry mountainous pastures and meadows. On almost all the Highland mountains. Mr. BROWN. [On the top of Ben Lomond. Dr. SMITH.] P. July—Aug.

uliginosum. G. Stem branched, spreading; flowers crowded, terminating.

*Dicks. h.s. -Fl. dan. 859-E. bot. 1194-H. or. vii. 11. 14. f. 4-Dod. 66. 3-Lob. ic. i. 481. 1-Ger. em. 639. 2-Park. 686. 4-Pet. 18. 7-Ger. 515.*

*Stem* three to nine inches high or more, upright, with a thick white cotton, much branched; branches spreading, more cottony and thicker towards the end, the lower often trailing, clothed with numerous leaves particularly towards the end, and these thickest and most cottony. *Leaves* elliptical, tapering into a long leaf-stalk, slightly cottony and greenish above, more cottony and whitish underneath. *Flowers* nearly sitting. *Calyx* scales spear-shaped, smooth, brown, shining, when in seed blackish, almost hid in the cotton. *Down* sitting, with simple rays, as long as the calyx. WOODWARD. *Whole plant*, particularly the base of the calyxes and fruit-stalks, covered with a cottony substance. *Leaves* strap-shaped. *Flowers* globular. *Calyx* shining, yellowish-brown-green, turning black; *scales* skinny, inner ones oblong. *Blossom* yellowish.

*Black-headed Cudweed.* In watery places, especially where stagnant water has remained during the winter. A. Aug.

gallicum. G. Stem forked, upright; flowers awl-shaped, axillary; leaves thread-shaped.

*Dicks. h. s.-E. bot. 2369-Pluk. 298. 2-Pet. 18. 12.*

*Leaves* somewhat cottony, but smooth, not hairy. LINN. *Whole plant* cottony, but the cotton shorter than either that of the *germanicum* or *montanum*. *Stem* much branched. *Leaves* awl-shaped, half embracing the stem, about an inch long. Mr. WOODWARD. (*Receptacle* convex, tubercled. E.)

*Grass-leaved Cudweed*. *Filago gallica*. LINN. Gravelly cornfields. In sandy ground about Castle Haveningham, Essex, (not now to be found there. E.) [Heaths, Derbyshire. Mr. WOODWARD.] (July—Aug. E.)

G. Stem upright, somewhat forked; (leaves spear-shaped, sharp-pointed, flat; E.) flowers conical, axillary and terminating.

*E. bot.* 1157—*Pet.* 18. 11—*H. ox.* vii. 11. 3. *a.*—*Ger.* 517. 8—*Lob. ic.* i. 481. 2—*Ger. em.* 641. 9—*J. B.* iii. a. 159—*H. ox.* vii. 11. 3. *b.*

Stem much branched, cottony. *Leaves* spear-shaped, sitting, pressed to the stem, cottony, three or four lines long. Mr. WOODWARD. *Stems* upright or spreading, two to six inches high. *Leaves* pressed to. *Heads* roundish, sometimes from the sides, with from three to five flowers. *Flowers* pyramidal, five-cornered, sitting, or on very short fruit-stalks. *Hermaphrodite* florets four, in the very centre, fertile. *Female* florets about fifteen in the disc, and four or five in the circumference, lying within the scales of the common calyx, all fertile. *Anthems* of the hermaphrodite florets four, with two bristles at the base. *Blossom* four-cleft. *Seeds* of all the florets of the centre sprinkled with very short glandular hairs, crowned with down; those of the florets of the circumference very smooth and downless. *Down* hair-like. Hence it appears that one species at least of Linnæus's *Filago* belongs to the Syngenesia *Superflua* order, according in structure as well as habit with the *Gnaphaliums*. ST. (*Down* rough. *Receptacle* tubercled. E.)

*Least Cudweed*. *Gnaphalium montanum*. WITH. Ed. 4. and there supposed to be *Filago montana* of Linnæus, but Dr. Smith has since ascertained that not to be the case. He observes that the real *F. montana* of Linnæus has leaves and flowers nearly double the size of our plant; that it is far more woolly, especially the scales of the calyx, and that all the blossoms are crowded together, never solitary. *Fl. Brit.* E.) Sandy meadows and pastures. [Manchester Race ground. Mr. CALEY.] (A. Fl. Brit. E.) P. July—Aug.

G. Panicle forked; flowers roundish, axillary, hairy; germanicum, leaves acute.

## SYNGENESIA. SUPERFLUA. Conyza.

*E. bot.* 946-*Fl. dan.* 997-*Sheldr.* 92-*Park.* 685. 3-*Pet.* 18. 10-*Fuchs.* 222-*J. B.* iii. a. 158-*Lonic.* i. 174. 3-*Matth.* 861-*Dod.* 66. 2-*Lob. obs.* 255. 1, and *ic.* i. 480. 2-*Ger. em.* 642. 10-*H. or.* vii. 11. 10-*Pet.* 18 9-*Ger.* 517. 9.

*Calyx* five-cornered. *Female florets* not within the common calyx, but between its scales. LINN. *Stems* several, the central one thickest; leafy. *Leaves* strap-spear-shaped, sitting, waved, cottony. WOODWARD. *Branches* horizontal, mostly two and sometimes three from below the head terminating the stem, each terminated by similar heads, from the base of which other branches proceed, subdividing several times so as to appear forked. *Florets* of three kinds. FLORETS OF THE CENTRE OF THE DISC, two or three, *hermaphrodite* tubular; border four-cleft. FLORETS OF THE SIDES OF THE DISC, numerous, *female* border four-cleft, upright; *seeds* fertile. FLORETS BETWEEN THE OUTER SCALES OF THE CALYX. *Seeds* oblong. LEERS. *Stems* upright, branched at the top. *Branches* rising above the stem. *Flowers* conical, sitting, yellowish brown. *Heads* solitary, surrounded with scattered leaves. *Stamens* four. *Anthers* with two bristles at the base similar to those of *Inula*. ST. *Calyx* outer scales very woolly; the inner skinny, spear-shaped ending in long taper points. *Blossom* yellowish. *Germeus* in all the florets rough, and crowned with down. (Globular heads many flowered, both lateral and terminating. E.)

*Common Cudweed. Chafeweed. Filago germanica.* LINN. Barren meadows, pastures, and road sides.

A. July—Aug.\*

CONYZA. *Recept.* naked: down hair-like: *calyx* tiled, roundish: *florets* of the circumference 3-cleft.

squarro'sa.

C. *Leaves* spear-shaped, acute; stem herbaceous; flowers in a corymbus; scales of the calyx with their points turned outwards.

\* It is given to cattle that have the bloody flux; and has been tried with success in similar complaints of the human body.—A horse eat it. ST.

*E. bot.* 1195—*Blackw.* 102—*J. B.* ii. 1051. 2—*Matth.* 870—*Chus.* ii. 21. 2—*Dod.* 51, 2—*Lob. obs.* 308. 3, and *ic.* i. 574. 1—*Ger. em.* 792—*Park.* 114—*Pet.* 18, 1—*H. ox.* vii. 19. 23—*Fl. dan.* 622.

*Leaves* bluntly-oval-spear-shaped, irregularly serrated, woolly on both sides, decreasing in size upwards, those at the base of the flowering branches spear-shaped, or strap-spear-shaped, scarce perceptibly serrated. *Flowers* numerous. *Fruit-stalks* short, woolly. *Floral-leaves* spear-shaped, small, one on each fruit-stalk. *Calyx* scales strap-spear-shaped, numerous, the lower green, the upper yellowish, the points green and expanding. *Seeds* small, blackish, furrowed. *Down* sitting, as long as the calyx. *Mr. WOODWARD.* *Stem* two or three feet high; nearly cylindrical, reddish, rough with short woolly hairs. *Leaves* woolly underneath, and hairy above. *Calyx* scales purplish at the edge, with very short woolly hairs on the outside. *Blossom* yellow; *florets* without pistils, in the circumference with petals; *individuals* with only pistils, slightly cloven into three, have at first sight the appearance of a funnel-shaped floret, but are really more of the nature of a strap-shaped floret. *Blossom* dusky purple, or yellowish. (The whole plant bitter, and slightly aromatic. *Receptacle* tubercled. *E.*)

*Great Flea-bane.* *Plowman's Spikenard.* Mountainous meadows and pastures and road sides in a calcareous soil. Woods in Norfolk in a clayey soil, very common. *Dr. SMITH.* At Force Forge, and at Hollow Oak in Furness Fells. *Mr. JACKSON.* On the common near Pennybridge. *Mr. ATKINSON.* (Plentiful about St. Vincent's Rocks, Bristol. *Fl. Brit.* *E.*) *Lilleshall Abbey.* Shropshire. *B. July—Aug.—Sept.*

**ERIGERON.** *Recept.* naked: down hair-like: *florets* of the circumference strap-shaped, very narrow, (numerous: *cal.* tiled. *Fl. Brit.* *E.*)

*E.* Stem and flowers panicled, rough with hair; leaves canadense, spear-shaped, fringed,

*E. bot.* 2019—*Bocc. rar.* 46. at p. 86—*H. ox.* vii. 20. 29—*Pet.* 16. 12—*Zanon.* 23. 1.

*Stem* firm, frequently crooked, much branched towards the top. *Leaves*, the lower oval, tapering into a leaf-stalk; those above spear-shaped, with distant serratures, slightly hairy above,



more so underneath; those at the base of, and on the branches, strap-spear-shaped, very entire, sitting. *Flowers* numerous. *Fruit-stalks* slender, branched and simple. *Calyx* outer scales short, the inner longer, strap-shaped, with a green line along the back, whitish and membranaceous at the edge. *Florets* very small. *Seeds* minute. *Down* sitting, simple, as long as the florets. Mr. WOODWARD. *Florets* in the centre, yellow; those in the circumference white, with a tinge of red. (*Stem* one to two feet high. E.)

*Canada Flea-bane.* Cultivated ground and on rubbish. (Sunderland Ballast Hills. Mr. WEIGHELL. Sandy ground below the bridge at Neath, Glamorganshire. Mr. MIDDLETON, in *E. bot.* E.) [St. Vincent's Rocks, Bristol.] A. Aug.—Sept.\*

*alpinum.*

E. Leaves blunt, woolly underneath; stem with 1 or 2 flowers; calyx rather hairy.

*E. bot.* 464—*Fl. dan.* 292—*Fl. lapp.* 9. 3—*J. B.* ii. 1047, right hand figure.

*Stems* a finger's length, unbranched, supporting a single flower, scored, besprinkled with hairs. *Leaves* few, alternate, spear-shaped, green, nearly smooth above, set underneath with expanding hairs. *Calyx* scales numerous, equal in length, spear-shaped; the outer scales broader, expanding, with longer hairs on both surfaces. *Florets* in the circumference white, as long as the calyx. *Petals* very numerous, strap-shaped and entire. *Style* thread-shaped, white, acute, cloven. *Central florets* numerous, yellow; styles yellow, cloven, blunt. *Fl. Suec.* Down a reddish rust colour. *Sp. pl.* Linnæus seems to consider the *E. alpinum* and *E. uniflorum*, as strictly forming but one species, observing that the former sometimes bears a panicle of white flowers, and the calyxes smooth. On this account we have given his additional remarks on both species. *Blossom* purple and yellow. (*Calyx* slightly hairy, not woolly as in *E. uniflorum*. *Seeds* bristly. *Fl. Brit.* E.)

*Alpine Flea-bane.* Found by Mr. DICKSON on wet rocks on Ben Lawers; but first discovered in this Island by the Rev. Mr. STUART of Luss, on Ben Lawers, and on Shuc and Lochain. Mr. BROWN.

P. (July. E.)

(The real *E. uniflorum* of Linnæus is reported to have been found also on Ben Lawers, and on rocks by the river Almond, near Lindoch, seven miles from Perth, by Mr. Don, but these two species still appear to us to be involved in ambiguity. vid. Lin. tr. v. 10. p. 346. E.)

\* (The bark of this plant, after having undergone the process of soaking may be manufactured into excellent paper; as stated by M. Losanne to the Agricultural Society of Turin. E.)

E. Fruit-stalks alternate, with 1, 2, or 3 flowers. a'cre.

Curt.—E. bot. 1158—J. B. ii. 1043. 2—Dod. 641. 4—Ger. em. 484. 10—Park. 126. 6—Pet. 16. 4—Col. ecphr. ii. 26. 2—H. ox. vii. 20. 25.

Stems 6 to 18 inches high, somewhat angular, hairy, often purple. Leaves, the lower oval, tapering down into a leaf-stalk; the upper spear-shaped, the uppermost strap-shaped, hairy on both sides, but mostly at the edge, very entire, often waved at the edge. Calyx scales unequal, awl-shaped, hairy. Florets of the circumference purple, a little longer than those of the centre; florets of the centre yellow. Down sitting, simple, yellow, as long as the florets. Mr. WOODWARD. Stem undivided, nearly two feet high, hairy. Leaves spear-shaped, alternate, sitting, hairy. Fruit-stalks from one to three inches, supporting from one to three flowers. (Seeds rough. E.)

Blue Flea-bane. Very dry meadows and pastures in a calcareous soil. Narford, Norfolk; (and on old walls at Ely. E.) Mr. WOODWARD. St. Vincent's Rocks, Bristol. Lime rocks, Dudley. Lilleshall Abbey, Shropshire. (Between Llanerch bridge and the village of Dymernchion, Flintshire, and about Denbigh Castle, in which stations it was pointed out to me by Mr. GRIFFITH. E.) B. July—Sept. (also early in Spring. Fl. Brit. E.)

TUSSILA'GO. Recept. naked: down hair-like: calyx scales equal, as tall as the surface of the florets, somewhat membranaceous.

T Stalk with one flower, tiled; leaves somewhat heart-shaped, angular, finely toothed. Far'fara.

Curt.—E. bot. 429—Kniph. 6—Walc.—Ludw. 50—Blackw. 204—Fl. dan. 595—Woodv. 13—H. ox. vii. 12. row 1. 1. f. 1—Dod. 596. 1 and 2—Lob. obs. 320. 1 and 2, and ic. i. 589. 1, and 2—Ger. em. 811—Ger. 666—Park. 1220—Pet. 17. 8, and 7—Fuchs. 140—J. B. iii. b. 563. 3—Trag. 418—Matth. 844—Lonic. i. 226. 2.

Root creeping. Leaves appearing as the flowers are going off, with several blunt lobes sharply toothed, green above with reddish veins, white and cottony underneath, the cotton easily rubbing off. Leaf-stalks long, reddish brown. Stalks numerous, solitary or in clusters, three to five inches high, lengthening after flowering, cottony, clothed with spear-shaped scales embracing the stalk, of a green mixed with brown. Flowers while in blos-

som upright, after flowering hanging down, but when the down of the seeds expand becoming upright again. *Calyx* scales strap-shaped, reddish brown. *Blossoms* yellow. *Florets of the circumference* very narrow, in two or three rows, as long as the calyx, expanding. *Florets of the centre* tubular, swelling upwards; clefts five, spear-shaped, bent back. *Summit* before the anthers have discharged their pollen covered by them, club-shaped and simple, but afterwards lengthened beyond them. *Down* sitting, longer than the calyx. Mr. WOODWARD.

*Common Colt's-foot.* Pastures and moistish places, in moist, stiff, clayey soil, and on limestone rubbish. P. March—April.\*

Petasi'tes.

T. Panicle egg-shaped; female florets few. LINN.—*entirely wanting in our plants.* WOODWARD.

*Curt.* 134—*E. bot.* 431—*Blackw.* 222—*Fl. dan.* 842—*Clus.* ii. 116. 1, and 2—*Dod.* 597—*Lob. obs.* 321. 2. and 3, and *ic. i.* 591—*Ger. em.* 814—*Pet.* 15, 12, and 11—*Ger.* 668—*H. ox.* vii. 12. 1. f. 3—*Park.* 419. f. 3—*Fuchs.* 645—*J. B.* iii. 566. 2—*Trag.* 415—*Lonic.* i. 226. 1—*Matth.* 845.

*Leaves* the largest of any of our native plants. The *flowers* appear before the leaves, as they do also in *T. Farfara* and most other spring plants. LINN. *Female florets* amongst the hermaphrodite, two or three, scarcely to be said to have petals, strap-shaped, white. LINN. THE SON. *Seeds* altogether barren. *Style* thread-shaped. *Summit* knobbed, spear-oblong, the point cloven. *Seeds* barren. The thick-headed club-like *summit* I believe may be depended upon as a certain mark of barrenness in the florets of the compound flowers of the Syngenesian class, and evinces the propriety of removing this genus to the order *Polygamia necessaria*. How they are propagated, unless by lateral shoots, I do not know, but this will not account for its general diffusion over the island, unless we suppose that, in this

\* It is the first plant that vegetates in marl or limestone rubble. The downy substance on the under surface of the leaves, wrapped in a rag, dipped in a solution of Saltpetre, and dried in the sun, makes the best tinder. The leaves are the basis of the British Herb Tobacco. They are somewhat austere, bitterish, and mucilaginous to the taste. They were formerly much used in coughs and consumptive complaints; and perhaps not without reason, for Dr. CULLEN found them of considerable service in scrophulous cases; he gave a decoction of the dried leaves, which succeeded where sea-water failed. *Cullen's Mat. Med.* p. 458.—FULLER relates a case of a girl, with twelve scrophulous sores, who was cured by drinking, daily, as much as she could, for above four months, of a decoction of the leaves made so strong as to be sweetish and glutinous. *Med. Gymn.* p. 91. Goats and sheep eat it. Cows are fond of it. Horses and swine refuse it. LINN. It may be destroyed by cutting off the crown of the root in March. Mr. PITT.



country, as well as in Switzerland and Sweden, they sometimes produce a few female florets interspersed among the rest. *St.* *Stalk* eight to twelve inches high, with numerous spear-shaped scales embracing the stalk. *Florets* all hermaphrodite, tubular; at the base narrow and greenish white; upwards swelling, reddish without, and white within, deeply divided into five spear-shaped expanding segments. *Anthers* as long as the blossom, purplish. *Pollen* yellow. *Pistil* white. *Summit* club-shaped, downy, shorter than the anthers before they have discharged their pollen, longer afterwards. *Down* sessile. Mr. Woodward.

*Butter-bur. Pestilent-wort.* Moist meadows and pastures, and banks of rivers. [In a meadow on the West side of Welling-ton, Shropshire; and in Mottershall Brook near Stone, Staffordshire. On the sides of the Water of Leith, near St. Bernard's Well, Edinburgh.] P. March—April.\*

*T.* Panicle oblong; female flowers numerous, without hy'brida. blossoms.

*E. bot.* 430—*Dill. elth.* p. 309. *t.* 230.

*Down* sitting. LEERS. *Leaves* exactly like those of *T. Petasites*. *Stalk* one to two feet high, with numerous scales like those of *T. Petasites*. *Fruit-stalks* branched, woolly, with several flowers. *Flowers* smaller than those of *T. Petasites*. *Calyx* bellying, slightly cottony; scales nearly equal, pale, green, purplish at the points and edges. *Female florets* numerous, white, slightly and irregularly cloven into five or four segments, closely embracing the style. *Hermaphrodite florets* usually one, sometimes two in the centre, but frequently wanting; purplish without, white within; the tube narrow, swelling upwards, and divided into five equal, bluntly-shaped, expanding segments. *Anthers* purple, shorter than the blossom. *Style* longer. *Summit* slightly cloven, in the hermaphrodite club-shaped, in the females slender. Described from a growing plant, but not wild. Mr. Woodward. *Panicle* six inches long, tapering at the end. *Seeds* in what I have examined, but they have been only dried specimens, generally abortive, never having found more than one fertile seed. *St.* (Dr. Smith suggests that this plant may be the real female of *T. Petasites*. E.)

\* The roots abound with a resinous matter. They have a strong smell and a bitterish acrid taste. Horses, cows, goats, and sheep eat it. Its large leaves afford shelter from showers to poultry and other small animals. LINN.



*Long-stalked Coll's-foot, or Butter-bur.* [Dishley Mill. Moist meadows near Loughborough, Leicestershire. Dr. ARNOLD. Very common about Manchester, the banks of the Irwell are crowded with it. It will shoot up from four inches to four feet during the time of flowering. Mr. CALEY.] (Near the river Wherf between Ilkley and Skipton. TEESDALE. Near Leeds, plentifully. Rev. W. WOOD. Near Sleningsford; also Magdalene Banks near Tanfield. Rev. J. DALTON. Plentifully in the Mill Yard at Lenton, in the road to Woollaton Hall, Nottinghamshire. DEERING. E.) P. April.

SENE'CIO. *Recept.* naked: down hair-like, long: calyx conical, double; the scales as if dead at the ends.

(1) *Florets all tubular.* [S. viscosus.]

vulgaris. S. Leaves winged-indentured, embracing the stem; flowers scattered.

Curt.-E. bot. 747-Kniph. 6-Fl. dan. 513-Blackw. 132-Walc.-Trag. 285-Dod. 641. 2-Matth. 1132-Lonic. i. 96. 2-Lob. obs. 112. 2, and ic. i. 225. 2-Ger. em. 278. 1-Park. 671-H. ox. vii. 17. 1-Pet. 17. 5-Ger. 217. 2-Fuchs. 286.

*Calyx* scales at the base spear-shaped, purplish black about one third of their length. *Florets* all hermaphrodite. *Blossoms* yellow, terminating. (*Stem* upright, branched; leafy, almost paniced, angularly-cylindrical, nearly smooth. *Leaves* alternate. *Stigma* cloven in two, at length protruding. *Seeds* furrowed, pubescent. *Down* sitting, rough. *Receptacle* swelling out, dotted, smooth. *Fl. Brit. E.*)

*Common Groundsel.* Cultivated ground, rubbish, and court yards.

A. April-Sept.\*

\* A strong infusion of the plant vomits. The bruised leaves are a good application to boils. The seeds are very acceptable to Linnets and Goldfinches, when confined in cages. Cows are not fond of it. Goats and swine eat it. Horses and sheep refuse it. LINN.—A horse eat it. ST. (Dr. Swediaur recommends this plant as an anthelmintic, and the juice given internally to discharge Botts from horses. E.)

(2) *Strap-shaped florets in the circumference rolled back.*

*S.* Leaves wing-cleft, clammy; scales of the calyx loose, visco'sus. as long as the cup.

*E. bot.* 32—*Dill. elth.* 258. 336—*J. B.* ii. 1042.

In appearance and size resembling the *S. vulgaris*, but clammy all over from hairs which secrete a viscid liquor. *Leaves* in mountainous situations with a leprous scurf underneath. *Fruit-stalks* lateral, with two and three flowers. *Calyx*, the scales at the base as long as the tube, as it were dead at the ends. LINN. *Rays* sometimes wanting. HALL. *Stem* taller and stronger; *leaves* more divided; *flowers* larger; *fruit-stalks* longer, the upper forming a kind of broad-topped spike; *seeds* longer, and more deeply furrowed; and the *down* longer than in *S. vulgaris*. Mr. WOODWARD. *Blossom* yellow. The hairs on the cup and on every other part of the plant at once distinguish this from the *S. vulgaris*, even though the strap-shaped florets of the circumference should be wanting. (*Stem* a foot high or more, much branched. *Blossom* larger than in the preceding. *Calyx* rough with hairs, viscid. Whole plant strong smelling. *E.*)

*Clammy Groundsel.* Sandy ground. Fen banks in the Isle of Ely. Waste ground near towns and villages, as the Leven on the coast of Fife, near the salt works, and at Dysart near the pier, and at Charles Town, the lime-works of Lord Elgin. LIGHTFOOT. [King's Park, Edinburgh, Mr. YALDEN; under the Salisbury Craggs. St.] (About the chalk-pits at Dartford. Dr. SMITH. Plentiful a little Eastward of Swansea Ferry; and at Aldborough, near the beach. Mr. E. FORSTER, jun. North Moor lane near Easingwold. Rev. Archdeacon PIERSON. On Streatham Common, Surrey. MARTYN. Lane between Benwell and Newcastle on Tyne. Mr. WINCH. *Bot. Guide.* In a gravel pit at Ditchingham; Norfolk. Mr. WOODWARD.

A. Aug—Dec.

*S.* Leaves wing-cleft, finely toothed; stem branching in-sylvaticus. to a corymbus; upright.

*E. bot.* 748—*Rupp. jen. Hall.* 3. at p. 177—*Dill. elth.* 258. 337—*Dod.* 641. 1—*Lob. ic.* i. 226. 2—*Ger. em.* 278. 2—*H. or.* vii. 17. 2—*Pet.* 17. 6—*Fl. dan.* 869—*Ger.* 217. 1.

*Stem* taller, and firmer, though more slender than that of *S. viscosus*. *Leaves* narrower and more finely divided, frequent-

ly clammy in a hot sunny situation, but not so much so as those of *S. viscosus*. *Fruit-stalks* much more branched. *Flowers* more numerous, much smaller. *Seeds* shorter and broader. *Down* shorter, WOODWARD, strong-scented. *Stem* two to three feet high, with a fine woolliness of short, tapering, zig-zag hairs, brittle, branching from the bottom. *Branches*, the upper rising nearly to the same height. *Leaves* somewhat woolly, with scattered short hairs, tapering but not tipped with glands. *Fruit-stalks* somewhat cottony. *Calyx* conical, somewhat woolly; scales at the base awl-shaped, two to three, dead at the ends, thrice as small as those of the cup. *Blossom* full yellow. *St.* *Leaves*, edges rolled back. *Calyx* scales at the base few, short, slender, scarce sensibly dead at the ends. *Florets of the circumference* rolled back, close up to the cup. (*Stem* three feet high. *Flowers* only half the size of those of the preceding species, and of a paler yellow. *Receptacle* small. *Fl. Brit. E.*)

*Bushy Groundsel. Senecio viscosus* β. HUDS. Banks and mounds of earth in dry upland soil, dry heaths, and sandy ditch banks. [Ruddy Hill, near Mangots Field, Gloucester. Mr. SWAYNE. Laues about Birmingham.] A. July.

(squa'lidus. *S.* Radius spreading, longer than the calyx; its florets elliptical and entire; leaves pinnatifid, their segments distant, somewhat linear.

*E. bot.* 600.

At first sight much like a variety of *S. Jacobæa*. *Stems* upright, branched, somewhat hairy. *Leaves* embracing the stem, nearly smooth, flat, rather fleshy, often purplish beneath. *Flowers* solitary, at the end of terminal, stagging, bracteated corymbose stalks. *Calyx* smooth, almost hemispherical, its outer scales few and small. *Inner florets* very numerous. Those of the radius broad, spreading, elliptical, entire, of a bright golden yellow, at length reflexed. The plant smells like Tansey or Mugwort.

*Inelegant Ragwort.* On almost every wall in and about Oxford. *Fl. Brit. and E. bot.* A. June—Oct. E.)

(3) *Strap-shaped florets in the circumference expanding; leaves wing-cleft.*

tenuifo'tius *S.* Leaves winged; segments strap-shaped; lower-leaves on long leaf-stalks; flowers forming a corymbus; stem upright. JACQ.

*Jacq. austr. 278-E, bot. 574.*

*Stem* unbranched, one to three feet high, scored with ridges, firm, thick as a quill, entirely covered by the leaves, reddish, but clothed with cobweb-like cotton. *Calyx* green, not dead at the ends. *Leaves* either smooth on both sides, or clothed underneath with a cobweb-like cotton. *Lower* leaves on long leaf-stalks; *upper* leaves nearly sitting and upright. *Segments* strap-shaped, pointed, mid-rib underneath protuberating, long, distant, very entire, rarely toothed; edges rolled back. JACQUIN. (*Blossom* deep yellow. *Seeds* hairy. E.)

The figure of Jacquin is a very exact representation of it as it generally appears in the North of England. It but seldom occurs with us in the state represented in the Fl. Lond. and seems then to be a variety occasioned by a damper and more shady situation. Mr. WOOD.

Var. 2. Plant but little cottony; lower leaves sessile; segments broader.

*Curt. 294-Pct. 17. 3-Walc.*

*Stems* three to four feet high, firm, cottony. *Leaves* hoary, but sometimes dark green above, and not hoary; segments strap-shaped, parallel, sharply toothed, terminating in a point; the segments nearly equal in breadth to the mid-rib. *Flowering-branches* forming a kind of corymbus. *Fruit-stalks* with several awl-shaped flower-scales. *Florets of the circumference* spear-shaped, pale yellow. WOODWARD. *Stem* angular, furrowed. *Leaves* sitting, hairy, particularly underneath; the lower rough to the touch; the upper less hairy; segments strap-shaped, and toothed at the ends. *Calyx*, scales not dead at the ends, but yellow and woolly, the outer strap-shaped, fleshy, the inner the same, but edged with a broad membranaceous border. The leaves in this variety do not stand upright as in the preceding, nor do they so effectually hide the stem; the segments are much broader, and the hairiness is not such as to give a hoary appearance to the plant. Upon the whole its habit is so different, that had there not been a general coincidence in opinion, that cultivation alone is sufficient to occasion the differences pointed out, I should have considered them as distinct.

*Hoary Groundsel. Senecio erucifolius.* HUDS. CURT. but not of LINNÆUS as I understand from M. Afzelius, though he observes that all the synonymys, except *It. scan.* attributed to that, really belong to our plant. Woods and hedges. [Bath Hills, near Bungay, Suffolk. Mr. WOODWARD.—Baydales, Darlington. Mr. ROBSON.—Both varieties found near Blymhill, Shropshire, by the Rev. S. DICKENSON.] P. Aug.

S. Leaves lyre-shaped, almost winged; segments finely jagged; stem upright. Jacobæ'a.



*Kniph.* 6-*Fl. dan.* 944-*E. bot.* 1130-*Matth.* 1133-*Clus.* ii. 22. 1-*Dod.* 642-*Lob. obs.* 113. 2, and *ic.* i. 227. 1-*Ger. em.* 280. 1-*Park.* 668. 1-*Pet.* 17. 1-*Fuchs.* 742-*J. B.* ii. 1057. 1-*Trag.* 287-*Lonic.* i. 96. 3-*H. ox.* vii. 18. 1-*Ger.* 218. 1.

*Florets* in the centre 60, in the circumference 13. **RELHAN.** *Stem* cylindrical, scored, generally smooth, often tinged with purple. *Leaves* doubly wing-cleft; wings variously lobed, and toothed, and sometimes again wing-cleft. *Blossoms* deep yellow. **Mr. WOODWARD.** *Stem* often thinly sprinkled with a fine cotton. *Leaves* wing-cleft, almost winged; segments wing-cleft; lesser segments broader towards the end; with thin spread cotton here and there. *Calyx*, scales 13, sometimes 15. *Florets* of the circumference 13. *Filaments* towards the end thickening into flat egg-shaped glands, disappearing as soon, or soon after the pollen is shed, rendering it probable that they are intended for the nourishment of the pollen. **SR.**

*Common Ragwort.* *Seggram.* Meadows, pastures, and road sides. **P. July.**

**Var. 2.** Flowers without rays. Is so exceedingly like the preceding, that it cannot be considered as a different species. It is very common on the sand hills of Holland. **LINN.**

In great plenty in gravel on the sea shore, three or four miles from Drogheda, scarcely one in a thousand being radiated. **SHERARD** in *R. Syn.* Perhaps this variety may be solely attributed to the sea air, which is well known to be destructive to the more tender parts of vegetables.

**Var. 3.** Flowers without rays; whole plant hoary with a dense cottony substance.

Marazion Marsh, Cornwall. **June.\***

**aquaticus.** **S.** *Leaves* toothed, those at the root egg-shaped, those of the stem wing-cleft; the outer segment largest, **HUDS.**

*E. bot.* 1131-*J. B.* ii. 1057. 3-*Pet.* 17. 2-*Fl. dan.* 784-*Clus.* ii. 23. 1-*Ger. em.* 280, 3.

\* (This plant has been recommended in a bruised state as an application to cancers. *E. bot.* E) If it be gathered before the flowers open, and used fresh, it dyes wool of a full green, but the colour is apt to fade. If woollen cloth be boiled in alum-water, and afterwards in a decoction of the flowers, it takes a beautiful deep yellow. Horses and sheep refuse it. Cows are not fond of it. **LINN.** Horses and cows eat it when young.

*Stem* cottony, purplish. *Root-leaves* on long leaf-stalks; *stem-leaves* sitting; the uppermost wing-cleft; *wings* toothed. *Corymbus* of few flowers. *RELHAN.* *Leaves* wing-cleft, with some small wings at the base, and a very large one egg-shaped, scalloped, terminating, smooth. *Fruit-stalks* irregularly branching, with numerous awl-shaped scales. *WOODWARD.* *Stem* quite smooth. *Leaves* quite smooth; *root-leaves* with the terminating leaflet oblong. *Calyx* scales 15 to 21, dead as it were and brown at the points. *Florets* of the circumference about 21. *Filaments* thickening towards the end into oblong glands. *ST.* (Dr. Smith imagines he has discovered an additional characteristic of this species in the smoothness of the seeds, both of disk and radius. *Blossom* yellow. In dryer stations this plant becomes very slightly woolly. *Fl. Brit. E.*)

This plant is liable to vary much in its foliage. I have some specimens in which the leaves are wing-cleft for more than half their length from the base; others in which the leaves may be most properly considered as entire, with one or two pair of wings on the leaf-stalks, and others again in which the upper and lower leaves have no wing-cleft segments; hence I am strongly induced to believe that this does not specifically differ from the *S. Jacobæa*, the latter growing in dry uplands, the former in moist meadows. Mr. Hudson's *S. aquaticus* certainly corresponds with the Linn. Sp. char. of the *Jacobæa*, which can hardly be said of the upland plant which we call *Jacobæa*.

*Water Groundsel. Marsh Ragwort.* Ditches and watery places, and moist meadows and pastures. P. July—Aug.

(4) *Strap-shaped florets in the circumference, expanding: leaves undivided.*

*S. Leaves* sword-shaped, acutely serrated, a little woolly paludosus. underneath; stem quite straight.

*E. bot.* 650—*Fl. dan.* 385—*Ger.* 347—*Ger. em.* 483. 6—*Pet.* 16. 8—*Thal.* 3—*J. B.* ii. 1063. 3—*Park.* 1232—*H. ox.* vii. 19. 22.

*Leaves* sometimes cottony on both sides. *LINN.* *Stem* two to five feet high, simple. *Leaves* very long, strap or spear-shaped, losing their woolliness by age. *Umbel* flat topped. *Flowers* two inches broad. *Calyx* conglutinated. *HALL.* *Blossom* yellow, (large. *Stem* hollow, clothed with a loose cottony substance. *Seeds* hairy. *Receptacle* slightly so. *E.*)

*Bird's-tongue Groundsel. Marsh Golden-rod.* Marshy ditches and their banks in the Isle of Ely, near Stretham Ferry,

but not common. (In Lakenheath fen near Wangford, Suffolk. Rev. Mr. HEMSTED. On the banks of ditches near Braford water, half a mile from Lincoln. Rev. Mr. WOOLLASTON. *Fl. Brit. E.*) P. (July. E.)—Aug.

saracén'icus. S. Flowers in a corymbus; leaves spear-shaped, serrated, almost smooth.

*Jacq. austr.* 186—*Kniph.* 4—*E. bot.* 2211—*Ger.* 350—*Fuchs.* 728—*J. R.* ii. 1063. 2—*Trag.* 487—*Lonic.* i. 241. 3—*Dod.* 141. 1—*Lob. obs.* 159. 3, and *ic.* i. 299. 2—*Ger. em.* 429.

Distinguishable by its appearance, broad leaves, size, and root which creeps very much. LINN. *Leaves* rather toothed than serrated. *Floral-leaves* very slender; as long or longer than the partial fruit-stalk. Strap-shaped florets about seven or eight. *Flowers* yellow. (*Stem* three to five feet high, smooth. *Leaves* alternate, sessile. *Calyx* slightly cottony; scales at the base spear-shaped. *Seeds* smooth. E.)

*Broad-leaved Groundsel.* Moist meadows and pastures, and ditch banks, (but very uncommon. E.) Between Wells and Glastonbury, and near Shipton-mallet, and elsewhere in Somersetshire. Near Halifax, in the fields about Salkeld; *R. Syn.* and about Clapham and Ingleton, Yorkshire. HUDSON. [In the hedges near Longtown, and on the side of the river below Carlisle. Mr. JACKSON.] (Near Settle, Yorkshire. Mr. J. WINDSOR. Brawsholme, 19 miles from Preston. Rev. J. RUDD; near Chester. Mr. OKELL; in a watery lane near Prestonhall, between Kirkby Lonsdale and Kendal. Dr. SMITH. *E. bot.* In a meadow at Abenbury, near Wrexham, Denbighshire, close to the side of the brook called Llender, in the holding of Robert Ellis, tenant of Tyn y Coed; also on the banks of the river Dee above Eaton Boat, Cheshire. Mr. GRIFFITH. E.)

P. July—Aug.\*

ASTER. *Recept.* naked: down hair-like: radiating florets more than 10: *calyx* tiled; the lowermost scales open.

\* The *Phalæna fuliginosa*, *Jacobæa*, and *pronuba*, live upon the several species. (It is reported to have been valued for medicinal virtues by the Saracens, and is certainly an astringent of no mean power, E.)

A. Leaves strap-spear-shaped, fleshy, smooth, 3-fibred; Tripodium. calyx scales blunt, somewhat membranaceous.

*E. bot.* 87—*Fl. dan.* 615—*Gmel.* ii. 80. 2—*J. B.* ii. 1064. 2—*Ger.* 333—*Dod.* 379—*Lob. obs.* 157. 4, and *ic.* i. 296. 1—*Ger. em.* 413. 1—*Park.* 674—*Pet.* 17. 10—*Lob. obs.* 158. 1, and *ic.* i. 296. 2—*Ger. em.* 413. 2—*Pet.* 17. 11—*H. ox.* vii. 22. 36.

*Stems* one to three feet high. *Flowering-branches* from the bosom of the upper leaves. *Fruit-stalks* branched. *Calyx* scales in two or three unequal rows, short, egg-shaped, scored, green and brown, with reddish brown anthers. *Florets* of the circumference spear or strap-shaped, pointed, frequently cloven at the point, bright blue. WOODWARD. *Flowers* with somewhat of a sweetish scent. *Florets* of the circumference 21 to 23, of a bluish lilac, (sometimes white. E.) *Florets* of the centre fewer, about 18, (deep yellow. Down of a reddish colour. E.) *Seeds* of the female florets, but half the size of the others. (Plant herbaceous, slightly glaucous, smooth, greatly varying in size, forming a corymbus. *Leaves* very entire. E.)

*Sea Star-wort.* Salt marshes on the sea coast, in a muddy soil, [and in salt marshes in the inland parts of the kingdom, as near Shirley Wich, Staffordshire; in a meadow between the Trent and the Canal. ST. West side of Walney island. Mr. ATKINSON. Shore of the Avon, a little above the Hot-well, Bristol, between the gravel walk and the river.] (Dickenson's Dingle and Garston, near Liverpool. Dr. BOSTOCK. E.) P. Aug.—Sept.\*

Var. 2. All the florets tubular.

*Pet.* 17. 12.

About Bristol, frequent. RAY.

SOLIDA'GO. *Recept.* naked: down hair-like: florets of the circumference about 5: calyx scales tiled, laid close.

S. Stem serpentine, branched; leaves mostly sessile; Virgaurea. flowers in crowded panicles.

\* Goats and horses eat it. Cows and swine refuse it. Sheep are not fond of it. LINN. May it not, when growing in an inland situation, be depended on as a proof of the existence of salt springs? ST.



SYNGENESIA. SUPERFLUA. *Solidago*.

Var. 1. Stem branched ; leaves strongly serrated.

*E. bot.* 301—*Ludw.* 150—*Sheldr.* 63—*Blackw.* 169—*Ger.* 348. 2—*Tabern.* 1260—*Pet.* 16. 10—*Dod.* 142. 2—*Lob. obs.* 159. 2, and *ic.* i. 299. 1—*Ger. em.* 430. 2—*H. ox.* vii. 23. row 1. 4.

Var. 2. Stem branched ; leaves indistinctly serrated.

*Fl. dan.* 663—*Kniph.* 7—*Matth.* 1006—*Dod.* 142. 1—*Lob. obs.* 159. 1, and *ic.* i. 298. 2—*Ger. em.* 430. 1—*Ger.* 348. 1—*Pet.* 16. 9—*H. ox.* vii. 23. 20.

*Root-leaves* serrated, *Stem-leaves* sometimes serrated, but mostly entire. LINN. From one to four feet high. Lower leaves oval-spear-shaped, tapering into a leaf-stalk, distantly serrated, but towards the point almost entire, rough, slightly hairy, dark green above, sea green underneath, with a network of numerous veins; the upper alternate, nearly sitting, spear-shaped, entire, or nearly so. *Flowering branches* axillary, the lower shorter, the upper longer than the leaves, with six to eight flowers on branched fruit-stalks. *Flower-scales* one or two on each fruit-stalk. *Calyx*, scales unequal, spear-shaped, with a green line along the back, and whitish, shining, membranaceous edges. *Seeds* brown, convex on one side, flat on the other, hairy the whole length, nearly as long as the calyx. WOODWARD. *Stem, leaves, calyx*, and tubular parts of the *florets* thick set with very short, opaque, white, bristly hairs. *Calyx* within of a silvery white, the outer scales much shorter. *Florets* of the centre, segments bent back. *Florets* of the circumference six to eight, bent back, with four or five faint longitudinal scores, and three or four teeth at the end. *Blossom* yellow.

*Common Golden-rod. Woundwort. Solidago Virga-aurea.* HORT. CLIFFORT. Woods, hedges, heaths, copses.

P. Aug.—Sept.

Var. 3. Stem serpentine, unbranched ; leaves spear-shaped ; flowers in a spike-like terminating bunch.

Mountains near Kendal. Mr. GOUGH.

In all these varieties the degree of serrature on the leaves, as well as the length of the leaf-stalks, is very variable ; but the stem in all is serpentine, ribbed, and cottony.

Cam'brica. S. Stem straight, unbranched ; leaves spear-shaped, the upper nearly sessile, the lower on leaf-stalks as long as themselves ; flowers in a panicle.

*Dill. elth.* 306. 393—*Pet.* 16. 11.





From three to seven inches high. *Flowers* sometimes forming a corymbus, sometimes a compact spike-like bunch, but I have not seen the secondary fruit-stalks, branched, as in the *S. Virga-aurea*. Cultivated it attains the height of eighteen inches or more, but still preserves its straight unbranched stem and its great length of leaf-stalks. Specimens from Professor Thunberg, called *Virga-aurea*, agree with our *Cambrica*, which confirms an observation Mr. Afzelius made to me, that Linnæus in Hort. Cliffort. had erroneously placed this as a variety of the common *S. virga-aurea*, whereas it is the plant of the Flora Suecia, and really distinct from that of the Hort. Cliffort. which is our common species.

*Welsh-golden-rod. Solidago Virga-aurea.* Fl. Suec. *S. virgaurea* γ. Fl. Brit. Pastures on the top of y Glyder Mountain, in Wales. LLOYD. Mountains about Llanberys, and on those of Yorkshire and Westmoreland. HUDSON. Llyn y Cwm, near Snowdon. PENN. *Wales.* [On the rocky precipice on the summit of Ingleborough, to the North-west. Mr. WOODWARD. Near Kendal. Mr. GOUGH.] P. July.

*S.* Stem straight, unbranched; root-leaves egg-shaped, on Lappo'nica. bordered leaf-stalks; stem-leaves spear-shaped, sitting; flowers in a spike-like terminating bunch and in the bosom of the upper leaves.

#### PLATE XXXIV.

About six inches high. *Spike* containing about ten flowers. *Solidago*, 306, Flor. Lapponica. I am indebted to Mr. Afzelius for the information that this Lapland plant had been found in Scotland, and I have now a specimen before me which I believe came from the mountains in Westmoreland.

(On comparing specimens of these several kinds of *Solidago* we are inclined to believe that *S. virgaurea* and *cambrica* may prove to be one and the same species, subject to occasional variation in certain particulars; but *S. Lapponica* seems still to maintain an independent character, and is remarkable for its unbranched stem, and root-leaves decidedly orbicular, toothed, or bluntly crenate, and extending down the leaf-stalk, as we have endeavoured to represent in the annexed plate. E.)

CINERA'RIA. *Recept.* naked: down hair-like: calyx single, many-leaved, equal.



palus'tris. C. Flowers in a corymbus; leaves broad-spear-shaped, tooth-indented; stem woolly.

*E. bot.* 151—*Fl. dan.* 573—*Gmel.* ii. 72—*Dod.* 52. 2—*Lob. ic.* i. 347—*Ger. em.* 483. 5—*H. ox.* vii. 19. 24—*Pet.* 16. 6—*Park.* 126. 3.

(Stems three feet high, upright, simple, thick, hollow, cornered. *Peduncles* woolly. *Seeds* furrowed, smooth. *Fl. Brit. E.*) *Leaves* thick, cottony, and almost clammy, covering the stem quite up to the flowers; the lower cut and almost wing-cleft. *LINN.* *Stem* one to three feet high, thick, hollow, with a thick clammy long wool. *Leaves* varying extremely in form and manner of growth, clothed with the same wool as the stem, without order, sitting, or half embracing the stem, waved, sometimes barely toothed, those immediately beneath the corymbus entire. *Fruit-stalks* branching. *Floral-leaves* awl-shaped, one on each fruit-stalk. *Calyx*, scales nearly equal, spear-shaped, woolly, membranaceous at the edge. *Blossom* pale yellow. *Florets* of the circumference oval, veined, with two or three teeth at the end, or entire; four lines long, with a short narrow tube. *Florets* of the centre somewhat shorter. *Others* somewhat longer than the blossom. *Style* in the *hermaphrodite* longer than the stamens; in the *female* as long as the tube. *Seeds* small. *Down* as long as the tube of the blossom; rays few. **WOODWARD.**

*Marsh Flea-wort.* Marshes in Lincolnshire. Fen-ditches about Marsh and Chatteress in the Isle of Ely; Caister near Yarmouth; about Pillin-moss, Lancashire; and Aberavon, Merionethshire. About Yarmouth, Norfolk, (and Ramsey, Huntingdonshire. *E.*) *Mr. Woodward.* (In Burton Moss, Westmoreland. *Mr. Robson,* Abundant by the Turnpike Gate at Haddisco, Suffolk. *Mr. Wigg.* *E.*) *P. June—July.*

Var. 2. Leaves not jagged. *R. Syn.* 174. n. 3. **WOODWARD.**

*Lob. ic.* i. 347. 1—*Ger. em.* 484. 8—*Park.* 126. 4—*H. ox.* vii. 19, row 2. 23—*Pet.* 16. 5.

Var. 3. Less woolly than var. 1. Stem slender, about eighteen inches high. Leaves strap-spear-shaped, toothed, the lower about four inches long, the upper two and a half to one and a half, and not more than one-fourth wide, not so numerous as in var. 1. Flowers smaller. Fructification perfectly similar.

Near Ramsey, Huntingdonshire. *Mr. Woodward.*

C. Flowers in a terminating umbel, with an involucre at integrifolia. its base; leaves inversely egg-shaped, woolly, indistinctly toothed.

Jacq. austr. 180—Fl. dan. 1177—Allioni 38. 2—E. bot. 152—Relh. at. p. 320—Jacq. misc. i. 17. 4—Pet. 17. 4.

Root fibrous. Root-leaves on leaf-stalks, spatula-shaped, obscurely toothed, cottony underneath; stem-leaves sitting, spear-shaped, cottony. Stem three to six inches high, simple, cottony, angular. Flowers one to four, yellow. Florets of the circumference ten to fifteen; of the centre numerous, prominent. Calyx furrowed, the edges skinny. Seeds hairy. Down simple. RELHAN. The size of this plant varies very much, as also does the number of its flowers. I have before me a specimen two inches and a half high, with only two flowers, and another lately sent by Mr. Relhan, nine inches high, and with an umbel of eight flowers. The fruit-stalk of the central flower but half the length of the others.

Mountain Flea-wort. *Cineraria alpina* β. LINN. *C. alpina*. RELH. *C. campestris*. RETZ. Scand. p. 159. Hilly pastures. Gogmagog Hills, Newmarket Heath, the Devil's Ditch, and near Basingstoke and Andover. (Downs of Sussex. Munge-well, on Grimes Dike; and Burford Downs, Oxfordshire. SIBTHORPE. Near Basingstoke, and Andover. HUDSON. Belhan, Isle of Wight, and Flower Down near Winton. PULTENEY. E.) P. May—June.

INULA. Receptacle naked: down hair-like: anthers with 2 bristles at the base.

I. Leaves embracing the stem, egg-shaped, wrinkled, cottony underneath; scales of the calyx egg-shaped. Helénium.

Woodv. 108—Kniph. 7—Blackw. 473—E. bot. 1546—Ludw. 59—Dod. 344—Lob. obs. 309, 1, ic. i. 574. 2—Ger. em. 793—H. or. vii. 24. row 3. fig. the last—Pet. 16. 1—Park. 654—Cars. —Ger. 649—Fl. dan. 728—Matth. 71—Fuchs. 242—J. B. ii. a. 108—Trag. 170.

Stem five or six feet high, branched towards the top, scored, cottony. Leaves, the lower on leaf-stalks, spear-shaped; the upper egg-spear-shaped, serrated or toothed, deep green, slight-

ly hairy above, whitish green and thickly cottony underneath. *Flowers* very large, solitary, terminating the stem and branches. *Calyx*, the outer egg-spear-shaped, like the leaves; the inner bluntly egg-shaped, cottony. *Blossom* yellow. *Florets* of the circumference one to one inch and a half long, with three pointed teeth at the end. *Down* shorter than the florets. **WOODWARD.**

*Elecampane.* Moist meadows and pastures. In Essex, frequent; about St. Ive's, Cornwall, and Bugden, Huntingdonshire; between Denbigh and St. Asaph, (and near the ruin and well at Wigfair, the seat of John Lloyd, Esq. Denbighshire; also at the bottom of the wall of a field bordering Garn dingle, in the same county. E.) [Side of Bredon Hill, ascending from Great Comberton, Worcestershire. NASH. Ripton and Warboys, Huntingdonshire, the latter far removed from any house. Mettingham, Suffolk. Not uncommon in Norfolk. Mr. WOODWARD. In a pasture ground near Wick Cliffs. Mr. SWAYNE. Several places near Dalton, clearly in a wild state. Mr. ATKINSON.] (Near St. Ive's, Cornwall. HUDSON. Very plentiful in the fields and lanes about Aber, Caernarvonshire. WARING. Byland Wood near Coxwold, Yorkshire. Rev. Archdeacon PIERSON, and pastures about Fountains Abbey. Mr. BRUNTON. E.)

P. July—Aug.\*

*dysente'rica.* I. Leaves embracing the stem, heart-oblong; stem woolly, forming a kind of panicle; scales of the calyx bristle-shaped.

Curt. 164—E. bot. 1115—Kniph. 12—Fl. dan. 410—Walc.—Matth. 872—Clus. ii. 21. 1—Dod. 52. 1—Lob. obs. 187. 1, and ic. i. 345. 2—Ger. em. 482. 3—Pet. 16. 2—H. ox. vii. 19. 7—Fuchs. 436—J. B. ii. 1050. 1.

*Calyx*, scales awl-shaped, soft, bowed back, coloured at the edge. LINN. *Stem* upright, cylindrical, scored, cottony, branched towards the top. *Leaves* spear-shaped, obscurely toothed, arrow-shaped at the base, cottony on both sides. *Flowers* terminating the stem and branches, solitary. *Calyx*,

\* The root is esteemed a good pectoral. Dr. Hill says, he knows, from his own experience, that an infusion of the fresh root, sweetened with honey, is an excellent medicine in the Hooping Cough. A decoction of the root cures sheep that have the scab. Horses and goats eat it; cows, sheep and swine refuse it. (Mr. Rose has obtained a white substance from the concentrated juice of this plant much resembling starch, though neither exactly that nor gum, but a farinaceous powder holding a middle rank between the two. E.)

scales numerous, cottony. Blossom yellow. Florets of the circumference with three teeth at the end. Down as long as the tube of the blossom. WOODWARD. Bristles at the base of the anthers very minute. Seeds rough with short bristles. Receptacle rough with short, stiff, projecting, spear-shaped points. (Stem a foot and half high. E.)

(A variety with very short rays has been described by Mr. Relhan in the second Edition of his Flora Cantabrigiensis. E.)

Middle Elecampane. Fleabane. Moist meadows and pastures, watery places, sides of brooks and rivulets.

P. Aug—Oct.\*

I. Upper-leaves embracing the stem, waved, strap-spear-pulica'ria. shaped, blunt; stem (very much branched, hairy; florets hemispherical, those of the circumference very short. E.)

Dicks. h. s.—Curt. 156—E. bot. 1196—Sheldr.—Fl. dan. 613—Blackw. 103—Ger. 390. 2—Trag. 166—Lonic. i. 131. 3—Dod. 52. 3—Lob. obs. 187. 2, and ic. i. 345. 1—Ger. em. 482. 4—H. ox. vii. 20. 30—Pet. 16. 3.

Stem cylindrical, scored, smooth, crooked, often tinged with purple, much branched. Leaves, the lower sitting; upper embracing the stem, spear-shaped, waved at the edge, slightly hairy and cottony. Flowers numerous, solitary. Calyx, scales numerous, awl-shaped, woolly, the lower spreading. Blossom yellow. Florets of the circumference with three teeth at the end; often wanting. Down shorter than the florets; rays few. WOODWARD. Stem upright, not prostrate. Flowers broad, short, cylindrical. Bristles on the anthers very minute, and much shorter than the filaments. Down shorter than the seed. (Florets of the circumference sometimes very few, or altogether wanting. Fl. Brit. It was the opinion of Dr. Afzelius that this plant is not the real *I. pulicaria* of Linnæus: Dr. Smith, however, who may be supposed to be more fully competent to judge of the habit of our English plant, and has diligently compared many with the actual specimens of Linnæus, finds no specific difference. The general appearance and form of the

\* It has a peculiar scent, compared by some to that of soap. The Russian soldiers, in the Persian expedition under General Keit, were much troubled with the bloody flux, which was cured by the use of this plant. Cows are not fond of it; goats and sheep refuse it. LINN. A horse eat it, but it is generally left untouched. ST.



SYNGENESIA SUPERFLUA. *Doronicum*.

flowers is the same in all, and the stems, though frequently upright, are sometimes found trailing. *Fl. Brit. E.*)

*Small-flowered Elecampane. Small Fleabane. I. uliginosa. Fl. ox. I. Pulicaria. LINN. I. cylindrica. WITH. ed. 3 and 4. HULL. SYM. Syn. HUDS. and other English authors. Road sides, and where water has stagnated during the winter. (Chesterton, between the Ferry and the Sluice: Hinton, Hauxton, &c. Cambridgeshire. RELHAN. E.) [About Wishaw. near Coleshill.]*

A. Aug.—Oct.

crithmoides. I. Leaves strap-shaped, fleshy, generally 3-pointed; (calyx smooth. E.)

*E. bot. 68—J. B. ii. a. 106. 3—Dod. 706. 1—Lob. obs. 215. 1, and ic. i. 395. 2—Ger. em. 533. 3—Park. 1287—H. ox. vii. 21. 16—Pet. 17. 9—Matth. 491—Ger. 427. 3.*

*Stems firm, smooth, scored, much branched. Leaves at the ends of the branches crowded. Flowers solitary, terminating the upper branches. Fruit-stalks thick. Calyx, scales numerous, awl-shaped, fleshy, yellowish green. Seeds woolly. Down shorter than the florets; rays few, when viewed with a glass finely toothed on one side. WOODWARD. Lower-leaves with teeth at the end, and sometimes a little toothed at the sides; upper ones entire. (Stems either upright, or trailing. Blossom yellow, large and showy. Down reddish. E.)*

*Golden Samphire. Samphire-leaved Fleabane. Salt marshes on the sea coast, in a muddy soil. P. Aug.*

**DORONICUM.** *Receptacle naked: down hair-like; calyx scales in 2 rows; equal, longer than the blossoms: seeds of the circumference downless and naked.*

Pardalian'. D. Leaves heart-shaped, blunt, finely toothed; root-leaves on leaf-stalks; stem-leaves embracing the stem.

*Jacq. austr. 350—E. bot. 630—Ludw. 57—Kniph. 2—Blackw. 239—Clus. ii. 19—Ger. em. 762—Park. 321. 7.—H. ox. vii. 24. 4—Mill. 128—Gars 15.*

*Stem* branched. *Seeds* of the circumference naked. LINN. (*Stem* erect, two or three feet high, rough with hairs, slightly viscid towards the top. *Flowers* terminating, solitary, large, yellow. *Scales* of the calyx strap-shaped, sharp-pointed, hairy. *Fl. Brit. E.*)

*Great Leopard's-bane. Wolf's-bane.* About Hoddam Castle, Annandale, and several other places in the Lowlands. LIGHTFOOT. Near the world's end, Harrowgate. Mr. MANBY. —[Near Duplin House. St.—Banks of the Severn below Bridge-north.] (By the road side, near Saling hall, Essex. Mr. WALFORD, in *Fl. Brit.*—Mountains of Northumberland. GERARD. —Hedge in a lane leading from Widdington, to a wood called the Jock, Essex. Mr. T. F. FORSTER, in *Bot. Guide. E.*)

P. May—June.

BEL' LIS. *Recept.* naked, conical: *down* none: *calyx* hemispherical, with equal scales: *seed* inversely egg-shaped.

B. Stalk naked; (root creeping. *Fl. Brit. E.*)

peren'nis.

*Curt.-E. bot.* 424—*Kniph.* 1—*Fl. dan.* 503—*Walc.-Blackw.* 200—*Ludw.* 184—*Matth.* 912—*Dod.* 265. 1—*Lob. obs.* 252, 2. and *ic.* i. 476. 1—*Ger. em.* 636. 5—*Pet.* 19. 2—*Ger.* 510. 4—*H. ox.* vi. 8. 26—*Ger.* 510. 3—*Ger. em.* 636. 4—*Park.* 530. 11—*H. ox.* vi. 8. 29—*Fuchs.* 147—*Trag.* 161.

*Stalk* with one flower. LINN. *Stalk* hairy, solid at the bottom, hollow at the end, sometimes with a few leaves. RELHAN. *Florets* of the circumference notched at the end. Mr. WOODWARD, and tipped with a fine carmine. *Leaves* oblong, blunt, notched, spread upon the ground. *Florets* in the centre yellow, those in the circumference white above, pink beneath. (Few plants vary in size more than the Daisy according to the nature of the soil in which it grows: In poor land dwindling to little more than an inch, with a wiry stem, in rich mould rising to four or five inches in height, with all its parts proportionably expanded. These different appearances have induced some Botanists to describe varieties, or even new species, but which, on change of situation, have failed to maintain a permanent character. *E.*)

## SYNGENESIA. SUPERFLUA. Chrysanthemum.

*Common Daisy.* Meadows and pastures.

P. March—Oct.\*

Var. 2. Flower herbaceous, globular.

In Mr. Shelden's copse near his house in Worcestershire.  
RAY.**CHRYSAN'THEMUM.** *Recept.* naked: down none, but a kind of border: *calyx* hemispherical, tiled; scales membranaceous at the edge.(1) *Florets of the circumference white.*leucan'the- C. Leaves embracing the stem, oblong; serrated upwards,  
mum. toothed at the base.*E. bot.* 601—*Ludw.* 183—*Kniph.* 6—*Curt.* 348—*Fl. dan.* 994.  
*Sheldr.* 6—*Matth.* 910—*Dod.* 265. 3—*Lob. obs.* 253. 2, and  
*ic.* i. 478, 1—*Ger. em.* 634—*Park.* 528. 1—*Walc.-Ger.*  
509—*Fuchs.* 148—*J. B.* iii. a. 114. 2—*Trag.* 144. 1—  
*Lonic.* i. 89. 1—*Pet.* 19. 1—*Blackw.* 42—*H. ox.* vi. 8.  
1. f. 2.*Seeds* black, with white scores, and crowned with a yellow cylindrical head. LINN. *Root-leaves* on leaf-stalks; *stem-leaves* sitting. *Flower* large. *Florets* of the centre yellow; of the circumference white, spear-shaped, with mostly three teeth. RELHAN. *Stem* (one and a half to two feet high, E.) upright, scored, simple, or with few branches. *Leaves*, the upper sometimes embracing the stem, oblong-wedge-shaped or spear-shaped, serrated, sometimes toothed, and even wing-cleft at the base. *Flower* one, terminating the stem, and principal branch. *Calyx* scales spear-shaped, unequal. *Florets* of the circumference sometimes entire. Mr. WOODWARD. *Calyx* outer scales green, edged with brown, the inner with the addition of a skinny membranaceous border.\* The leaves are slightly acrid. The roots have a penetrating pungency. No attention is paid to it, except what it claims from the beauty of its flowers. The flowers close at night. Horses, sheep and cows refuse it.  
LINN.

*Greater Daisy. Ox-eye. Moon-flower.* Dry meadows, pastures, and walls. P. June—July.\*

C. Leaves winged, many-cleft; stem branched, spread-ino'dorum.  
ing.

*E. bot.* 676—*Fl. dan.* 696—*Pet.* 19. 12—*Fuchs.* 144—*J. B.* iii. a. 120. 2.

Its calyx being skinny at the edge occasions it to be associated with the *Chrysanthema*. This obscure plant is readily distinguishable from *Anthemis Cotula*, which it very much resembles, as also *A. arvensis*, by the want of chaff on the receptacle; and from *Matricaria Chamomilla* by its flattish calyx; its scales brown and uneven at the edge; its receptacle hemispherical, not conical; the rays of the blossom expanding, not bent down, and its flowers being thrice as large. LINN. *Stem* much branched, smooth, scored, sometimes purplish. *Leaves*, wings distant, twice or thrice divided, the extreme segments thread-shaped, mid-rib broad, membranaceous, and somewhat embracing the stem at the base, narrowing upwards. *Flowers* large, terminating. *Florets* of the circumference nearly strap-shaped, eight to nine lines long, of the centre greenish at the base, yellow above. segments spear-shaped, expanding. *Receptacle* conical. *Seeds* brown, lopped at each end, with four whitish prominent angles. WOODWARD. *Seeds* with a brownish red circular gland in each corner at the top, resembling the eyes of some insects; the two inner sides concave; the angles sharp, prominent, and whitish, crowned at the top with a very shallow, whitish membranaceous border. ST. *Calyx* the middle row of scales the largest, all more or less membranaceous and skinny. *Florets of the circumference* bent back, twenty or more; those in the centre very numerous, yellow.

*Chamomile Goldins. Chrysanthemum inodorum.* LINN. WITH. ed. 3 and 4. HULL. RELH. SIETH. ABBOT. *Fl. dan. Pyrethrum inodorum.* *Fl. Brit.* E. bot. *Matricaria inodora.* *Fl. seuc.* and HUDS. which see. Cornfields and road sides.

A. July—Sept.

Var. 2. *maritimum.* Outer scales of the calyx with finger-like divisions; inner ones fringed at the edge.

Only about four inches high, but in other respects agreeing with the preceding.

On the Beach at Weymouth. May, 1794.

\* The young leaves may be eaten in sallads. Horses, sheep and goats eat it. Cows and swine refuse it.



(2) *Flowers entirely yellow.*

se'getum.

C. Leaves embracing the stem, jagged upwards, tooth-serrated towards the base.

*Dicks. h. s.—E. bot.* 540—*Fl. dan.* 995—*Clus. i.* 334. 2—*Dod.* 263. 1—*Lob. obs.* 298. 2, and *ic.* i. 552. 1—*Ger. em.* 743. 1—*Park.* 1370. 1—*H. ox.* vi. 4, row 2. 1—*Pet.* 19. 6—*Trag.* 144. 2—*Lonic. i.* 89. 1.

*Stem* upright, scored, smooth, branched, (one to two feet high. E.) *Leaves* sea-green, varying in figure, as wedge-strap or spear-shaped, distantly serrated towards the base, usually deeply toothed or jagged, with frequently three clefts at the end. (*Flowers* very large, yellow, E.) terminating. *Calux*, scales oval, blunt, sea-green, with membranaceous edges. *Florets* of the circumference oval, about half an inch long. *Seeds* slightly serrated, whitish. Mr. WOODWARD. Whole plant smooth. *Leaves*, segments terminated by a little projecting point. *Florets* of the circumference egg-shaped. *Summits* in the female flowers frequently three.

*Corn Marigold. Goldins. Yellow Ox-eye. Buddle* in Norfolk. Mr. WOODWARD.—*Cornfields*. [An extremely troublesome weed in the Norfolk turnep fields in a sandy soil. Mr. WOODWARD.] A. June—Oct.\*

**MATRICA'RIA.** *Recept.* naked: down none: calyx hemispherical, tiled: scales rather pointed, not skinny at the edge.

parthe'nium. M. Leaves compound, flat; leaflets egg-shaped, cut; fruit-stalks branched.

\* It was imported into Sweden along with corn from Jutland, about the end of the sixteenth century. In Denmark there is a law to oblige the farmers to root it up from their cornfields. It may be destroyed by dunging the ground in autumn, followed by a summer fallow, and harrowing the land about five days after sowing the grain. Its yellow flowers, however, which follow the sun in a very remarkable manner, give a brilliancy to the fields in tillage, and please the eye of the passing traveller. LINN.—A large quantity, which grew on some arable land, was cut when in flower, dried, and eaten by Horses as a substitute for Hay. Mr. HOLLEFEAR.—It is used by the Germans for dyeing yellow.

*E. bot.* 1231—*Ludw.* 192—*Kniph.* 5—*Gars.* 368—*Blackw.* 192—*Woodv.* 249—*Fuchs.* 45—*J. B.* iii. a. 129—*Dod.* 35. 2—*Lob. obs.* 433. 1, and *ic.* i. 751. 1—*Ger. em.* 652. 1—*Park.* 83. 1—*Pet.* 19. 5—*Matth.* 907—*H. ox.* vi. 10. 1—*Ger.* 526—*Fl. dan.* 674—*Lonic.* i. 151. 2—*Trag.* 156.

*Stem* three feet high, firm, scored, slightly hairy, (upright. *E.*) *Leaves* alternate, slightly hairy; *leaflets*, two or three pair, oval, jagged, a large one terminating, wedge-shaped, with three lobes, the middle one of which is three-cleft, the side ones scalloped. *Flowers* solitary. *Fruit-stalks* thickest just beneath the flower, hairy, mostly branched. *Calyx*, scales oval. *Florets* of the circumference wedge-shaped, white; those of the centre yellow. *Seeds* egg-shaped, lopped at the base, deeply furrowed, whitish. **WOODWARD.** *Stems* angular, scored. *Leaves* wing-cleft; *leaflets* oblong or egg-shaped, deeply divided into about five segments, and these again cut and jagged, when magnified appear as if sprinkled with minute spangles. *Calyx*, inner scales skinny and ragged at the edges. *Florets* of the circumference egg-shaped, white; those of the centre crooked, sprinkled with minute shining particles; only yellow at the top. *Flowers* sometimes double.

*Common Feverfew.* *Pyrethrum Parthenium.* *E. bot.* and *Fl. Brit.* Waste places, hedges, and walls. *P. June—July.\**

**M.** Receptacles hemispherical; leaves doubly winged, *maritima*, somewhat fleshy; convex above, keeled underneath.

*E. bot.* 979—*Ray* 7. 1. at p. 188.

*Root* woody, running deep, apparently perennial. *Stems* reclining, darkish purple, smooth, firmer and stronger than those of *Anthemis nobilis*, and forming a fuller turf, but not creeping or spreading so wide. *Leaves* thicker and shorter, shining, dark green. *Flowers* several on a stem. **DILL.** in *R. Syn.* 186. *Florets* in the centre yellow; those of the circumference white. (*Calyx* smooth, with scales very thin and blackish at the edge. *Seeds* furnished with a three-cleft or four-cleft membranaceous border. *E.*)

*Sea Feverfew.* *Pyrethrum maritimum.* *E. bot.* and *Fl. Brit.* *Matricaria inodora* *γ.* **HUDS.** Sea coast in sandy soil. On the

\* The whole plant has a strong smell, and a bitter taste, and yields an essential oil by distillation. A horse refused it. *St.*

coast of Sussex, and very plentifully at Cockbush, seven miles from Chichester. DILL.—Island of Bute, the Western side of Cantire, between Machrianish and Barr. LIGHTFOOT.—[Rocks at Doon, near Bamff, in Scotland. Dr. SMITH.—Isle of Walney. Mr. ATKINSON.] (Manorbia Bay near Pembroke. *E. bot.* At Weymouth. Rev. Archdeacon GOOCH. *Fl. Brit. E.*) P. July.

*Chamomilla*. M. Receptacles conical; rays expanding; calyx scales equal at the edge.

*Kniph.* 9—*Ludw.* 131—*Curt.* 331—*Blackw.* 67. 1—*E. bot.* 1232—*Sheldr.* 33—*Dod.* 257. 2—*Lob. obs.* 445. 1, and *ic.* i. 770. 1—*Ger. em.* 754. 1—*Park.* 85. 1—*Blackw.* 298—*Fuchs.* 25—*J. B.* iii. a. 116—*Trag.* 148—*Matth.* 905—*Lonic.* i. 90. 2—*H. ox.* vi. 12. 7—*Pet.* 19. 9.

*Stem* scored, branched, (about a foot high. *E.*) *Leaves* doubly winged, the upper often simply winged; wings distant; little wings with two or three clefts; leaflets strap-shaped, of an equal breadth with the mid-rib. *Flowers* solitary, terminating. *Calyx* scales bluntly spear-shaped, hairy, membranaceous at the edge, with a green line along the back. *Florets* of the circumference white, nearly strap-shaped, at first expanding, afterwards bent back; those of the centre yellow. *Receptacle* almost cylindrical, dotted. WOODWARD. *Leaves* more than doubly compound, with slender segments. *Seeds* numerous, minute, pale brown, furrowed. CURTIS. (In scent resembling the Common Chamomile. *E.*)

*Chamomile Feverfew.* (In cornfields, on dung-hills and by the sides of roads. A. May—Aug.\*

The plant hitherto supposed to be *M. suaveolens* of Linnæus proves not to be so: the real one, according to Dr. Smith having flowers only half the size of those of *M. Chamomilla*, and having never yet been found in these countries. *E.*)

AN'THEMIS. *Recept.* chaffy: *down* none: *calyx* hemispherical, scales nearly equal: *florets* of the circumference more than 5.

\* Its properties resemble those of *Anthemis nobilis*. The Finlanders use an infusion of it in consumptive cases. Cows, goats, and sheep eat it. Horses are not fond of it. Swine refuse it.

(1) (*Florets of the circumference white. E.*)

A. Receptacles conical; chaff bristle-like; seeds crowned arven'sis with a border.

*E. bot.* 602—*Fl. dan.* 1178—*Kniph.* 11—*Tabern.* 70. 1—*Pet.* 19. 8.

*Plant* hoary. *Stems* spreading. *Chaff* spear-shaped. *Root* biennial. It has the habit and size of the *A. Cotula*, but the stems spread more, the fruit-stalks are longer, less scored, the grooves being only four or five; in the *A. Cotula* about eight. The *leaves* are more of a grey green, and scentless. The inner scales of the calyx are broad and membranaceous at the end, not so in *A. Cotula*. The *chaff* in this is spear-shaped, in the other slender as a bristle: the apex of the seed is crowned with a four-sided border as in the *Matricaria Chamomilla*; in the *A. Cotula* the seed has no such crown. *LINN.* *Stem* branched immediately above the root, scored, slightly hairy, pale green, with sometimes a tinge of red. *Branches* generally naked upwards. *Leaves* sitting, winged; mid-rib broad; wings either winged, or only jagged, sea-green. *Flowers* terminating. *Fruit-stalks* hairy, and somewhat thicker beneath the calyx. *Calyx* scales oval, with an awl-shaped green line along the back, somewhat hairy; edges membranaceous. *Florets* of the circumference white, somewhat elliptical, with two or three teeth, four or five lines long: those of the centre with a greenish tube, swelling upwards, border yellow, bent back. *Chaff* spear-shaped, very much pointed, somewhat keeled, as long as the florets. *Seeds* quadrangular, smooth, slightly furrowed, narrowest at the base, crowned with a blunt margin. *Mr. WOODWARD.* Whole *plant* slightly woolly. *Stems* numerous, ascending, cylindrical, slightly scored, branched towards the top. *Leaves* winged, *leaflets* wing-cleft, and these again cut into two or three narrow segments, terminated by semi-transparent, conical, sharp points. (*Plant* nearly scentless; and flowers sweetish. E.)

*Cotula alba. Cotula non fœtida. Oculus bovis. Bupthalmum.* *DOD.* pempt. 259, is the plant here described.

*Corn Chamomile.* Gravel pits in Peckham Fields, and in the barren stubble fields between Eltham and Shooter's-hill. *RAY.*—Corn and fallow fields. *HUDSON.*—Cornfields and way sides, in gravelly soils. *PARSONS,* in *Fl. Scot.*—[Pastures about Affcote and the Stewponey, near Stourbridge, Worcestershire. *ST.*—Cornfields in Norfolk. *Mr. WOODWARD.*

B. June—July.



## SYNGENESIA. SUPERFLUA. Anthemis.

Var. 2. All the florets narrow.

*Cotula non fetida, flore pleno.* R. Syn. 186. St. James's field on the upper side near the highway, and at Great Strickland, Westmoreland. R. Syn.

Co'tula.

A. Receptacles conical; chaff bristle-shaped; seeds naked.

Curt. 329-Fl. dan. 1179-E. bot. 1772-Dod. 258-Lob. obs. 447. 1, and ic. i. 773. 2-Ger. em. 757. 1-Park. 87. 9-H. ox. vi. 12. 8-Fuchs. 583-J. B. iii. a. 121. 1-Blackw. 67-Gars. 216-Pet. 9. 11-H. ox. vi. 12. 10.

Fruit-stalks with about eight scores. Calyx scales by no means widening towards the point, and scarcely membranaceous. Chaff very minute, like a fine bristle. Seeds not crowned with the four-cornered edge, but terminated by a simple pore. LINN. Plant palish green. Stem slightly downy. Leaflets often cloven towards the end. Petals hanging down, and continuing in that state till morning. CURTIS. Stem upright, branched upwards. Branches alternate. Leaves doubly or trebly winged, green. Flowers solitary, terminating. Calyx scales spear-shaped. Chaff shorter than the florets. Seeds with many warty angles. Mr. WOODWARD. Leaves smooth. Outer florets white, three-toothed; central florets yellow. (The whole plant yields a strong aromatic odour. E.)

Stinking Chamomile, or Mayweed. Cornfields, road sides, and borders of dunghills.

A. May-Aug.\*

Var. 2. double-flowered. All the florets narrow.

*Cotula fetida flore pleno.* R. Syn. St. Fields between Hitchin and the Bald Oak, in the Isle of Thanet, and between Gillingham and Chatham. R. Syn.

no'bilis.

A. Leaves winged compound, strap-shaped, acute, somewhat woolly.

\* Toads are said to be fond of this plant. It is very ungrateful and displeasing to bees. Goats and sheep are not fond of it. Horses, cows, and swine refuse it. LINN. It frequently blisters the skin of reapers and of children who happen to gather it. The heads, rubbed between the fingers, smell intolerably disagreeable. The larvæ of the *Cassida viridis* feed upon it. CURTIS.

*E. bot.* 980—*Woodv.* 103—*Kniph.* 9—*Ludw.* 155—*Blackw.* 298.  
 1—*Gars.* 215. *a.* and 4 on the right hand—*Dod.* 260. 1—*Lob.*  
*obs.* 445. 2, and *ic.* i. 770. 2—*Ger. em.* 755. 4—*Blackw.*  
 526—*Trug.* 149—*Ger.* 616. 4—*J. B.* iii. 118—*Pet.* 19.  
 10.

*Stems* trailing, hairy. *Leaves* doubly winged; wings rather distant; little wings sometimes with two or three clefts, pointed, hairy, greyish. *Flowers* solitary. *Calyx* hairy, with broad, shining, membranaceous edges. *Florets* of the circumference somewhat elliptical, either entire, or with two or three teeth; those of the centre yellow. *Mr. Woodward.* *Summits* in the female florets sometimes three. *Chaff* oblong-egg-shaped, like the scales of the calyx, but more skinny and more hairy.

*Common Chamomile.* *Sweet-scented Chamomile.* Boggy pastures. In Cornwall so plentifully that you may scent it in riding along. Sunny meadows and pastures. *HUDSON.* [On the green at Pengwary, Redruth, and other old common pastures in the Western part of Cornwall, where it is much finer scented than in gardens. *Mr. WATT.* Park at Oatlands, Surrey. *Mr. Woodward.* On the road from Hedgeford to Stafford, near the direction post, plentiful. *Mr. PITT.* (On Lints Green in front of Lints Green Hall, Durham, between the house and the turnpike, plentiful. *Mr. WAUGH.* Terrington Common, Yorkshire. *TEESDALE.* Frequent on Commons in the Weald, Sussex. *Mr. BORRER.* *Bot. Guide.* South Leigh Heath, near the Hill Houses, Oxon. *Dr. SIBTHORPE.* A little to the South of Lowestoft church, Suffolk. On Houns-low Heath in abundance. Also in several parts of Norfolk. *Dr. SMITH. E.)* P. Aug.—Sept.\*

Var. 2. *nudum.* Florets of the circumference wanting.

*Dod.* 260. 2—*Lob. obs.* 446. 1. and *ic.* i. 771. 2—*Ger. em.* 754. 2—*Park.* 86. 2—*J. B.* iii. a. 119. 2—*H. or.* vi. 12. 3—*Ger.* 615. 2.

\* The leaves and flowers have a strong, not ungrateful smell, and a bitter nauseous taste. They afford an essential oil. An infusion of the flowers is often used as a stomachic, and as an antispasmodic. In large quantities, it excites vomiting. The powdered flowers, in large doses, have cured agues, even when the bark had failed. Both the leaves and flowers possess very considerable antiseptic properties, and are therefore used in antiseptic fomentations, and poultices. From their antispasmodic powers, they are frequently found to relieve pain, either applied externally, or taken internally. Ray recommends the flowers in calculous cases.

*Chamæmelum luteum capitulo aphylo.* R. Syn. 185. St.  
(Like the other species of this genus it is sometimes observed with double flowers. E.)

maritima. A. Leaves winged, finely toothed, fleshy, naked, dotted; stem prostrate; calyx somewhat cottony.

*Kniph.* 10—*E. bot.* 2370—*J. B.* iii. a. 122. 1—*Till. pis.* 19. 3.

*Stems* widely prostrate, smooth, purplish. *Leaves* winged, cut, naked, sprinkled with hollow dots, more closely toothed towards the base, with a purplish, elevated, transverse line beneath the base. *Fruit-stalks* terminating, solitary, somewhat scored downy, thicker above. *Flowers* of the scent of *M. Parthenium*. LINN. *Florets* in the centre yellow, (forming a flattened dish. *Seeds* membranaceous at the edge. Dr. Smith observes that the scales of the receptacle distinguish it at once from *Pyrethrum maritimum*, not to mention the hoariness of the herbage. E.)

*Sea Chamomile.* Meadows on the sea coast.

A. July—Aug

(2) (*Flowers entirely yellow.* E.)

tinctoria. A. Leaves doubly winged, serrated, cottony underneath; stem (upright, E.) supporting a corymbus.

*E. bot.* 1472—*Kniph.* 12—*Blackw.* 439—*Fl. dan.* 741—*Ger.* 607. 3—*Matth.* 909—*Barr.* 465—*Clus.* i. 332. 2—*Ger. em.* 747—*Pet.* 19. 7—*Fuchs.* 26—*J. B.* iii. a. 122. 2—*Trag.* 152—*Gars.* 419.

*Stem* scored, slightly hairy, much branched. *Leaves*, the lower winged; wings spear-shaped, toothed, slightly hairy and green above, sea-green underneath; the lower wings short, distant, toothed; the upper wings wing-cleft; mid-rib broader than the wings; the upper-leaves wing-cleft; mid-rib broad, toothed; wings irregular, strap-spear-shaped, toothed; the uppermost leaves sometimes simply toothed. *Fruit-stalks* long, naked, scored, slightly hairy, terminating the stem and branches, each with one flower. *Calyx* tiled; scales numerous, the outer of various lengths, spear-shaped, hairy, with a green line along the back, white and shining at the edge. *Florets* of the cir-

circumference<sup>1</sup> broad, with three teeth. Mr. WOODWARD. *Stems* scored, woolly. *Leaves* winged; *leaflets* with winged clefts; the segments tapering, finely pointed. *Calyx* hollowed on the under side round the fruit-stalk, woolly. *Blossom* yellow.

*Or-eye. Chamomile.* Sunny pastures, but not common. On a bank near the river Tees, not far from Stogburn, Durham. *R. Syn.* But Mr. Robson informs me it is not now to be found there. (Mr. Dickson has more recently gathered it in Essex; and Mr. G. Don, near Forfar. *E. bot.* Sunderland Ballast Hills. Mr. WEIGHELL. A single plant found by the road side near St. Anthony's Colliery, Durham, by Mr. CALLENDER. *Bot. Guide. E.*) P. July—Aug.\*

**ACHILLEA.** *Recept.* chaffy: down none: *calyx* egg-shaped, tiled: strap-shaped florets from 5 to 10.

A. *Leaves* strap-spear-shaped, embracing the stem, finely Ptar'mica. serrated.

*Curt.* 343—*E. bot.* 757—*Kniph.* 5—*Ludw.* 118—*Walc.—Fuchs.* 639—*J. B.* iii. a. 147—*Trag.* 159—*Lonic.* i. 235. 2—*Pet.* 19. 3—*Fl. dan.* 643—*Gars.—H.* ox. vi. 12. row 3. 1. f. 1—*Blackw.* 276—*Clus.* ii. 12. 1—*Dod.* 710. 1—*Lob. obs.* 243. 3, and ic. i. 455. 2—*Ger. em.* 606. 1—*Ger.* 483. 1—*Park.* 859. f. 1—*Matth.* 585.

*Stems* one to two feet high, firm, somewhat angular, smooth, often reddish. *Leaves* upright, scattered, sitting, firm, smooth, strap-spear-shaped, dark green, serratures very minute. *Fruit-stalks* somewhat cottony, with or without a floral-leaf. *Calyx* scales spear-shaped, keeled, cottony, bright green; edges membranaceous and reddish brown. *Florets* of the circumference oval, white, broad, with threeteeth, and a short tube; those of the centre very short, dirty yellow. Mr. WOODWARD. *Stems* angular somewhat woolly. *Leaves* half embracing the stem: ends of the serratures white, and almost of a bony hardness. *Calyx*

\* The flowers afford a remarkably clear and good yellow dye. The flowers of the *Chrysanthemum segetum* resemble them much in appearance, but experience proves they cannot be substituted in their place. Horses and goats eat it. Sheep are not fond of it. Cows and swine refuse it.



scales woolly without, brownish and skinny at the edges, *Florets* of the circumference rarely more than 12; those of the centre numerous. *Chaff* woolly.

*Sneeze-wort* Yarrow. Moist meadows and shady places, [and balks of cornfields. St.] P. July—Aug.

Var. 2. Flowers double.

*Chus.* ii. 12. 2—*Ger. em.* 606. 2.

Leaves truly spear-shaped, serratures deeper, as in the figures of *H. ox. Dod. &c.* Mr. WOODWARD.—All the *florets* except a few in the very centre, strap-shaped.

Small Holme Island in Winander-mere, and at Chilmark, Wiltshire. *R. Syn.* [At Ripton. Found by Mr. J. Whitelocke, nurseryman at Fulham. Mr. WOODWARD.]\*

*Millefolium.* A. Leaves doubly winged, segments of the wings strap-shaped, toothed.

*E. bot.* 758—*Kniph.* 5. and 7—*Ludw.* 67—*Fl. dan.* 737—*Woodv.* 64—*Anders-Blackw.* 18—*Chus.* i. 331—*Dod.* 100. 2—*Lob. obs.* 431. 1, and *ic.* i. 747. 2—*Ger. em.* 1072. 2—*H. ox.* vi. 11. 14—*Pet.* 19. 4—*Ger.* 914. 2—*Lonic.* i. 240. 1—*Gars.* 388—*Cer.* 914. 1—*Fuchs.* 727—*J. B.* iii. a. 136—*Trag.* 477—*Matth.* 1142—*Dod.* 100. 1—*Lob. obs.* 430. 2, and *ic.* i. 747. 1—*Ger. em.* 1072. 1—*Park.* 694. 1—*H. ox.* vi. 11. 6—*Matth.* 1141.

(*Root* creeping, putting forth runners. *Flowers* crowded together, small. *Disk* convex. *Fl. Brit. E.*) *Stem* angular, cottony, (a foot high. *E.*) *Fruit-stalks* cottony. Mr. WOODWARD. *Leaves* (more or less woolly, particularly underneath, *E.*) segments toothed. *Flowers* in a corymbus. *Blossom* white, or reddish purple. *Calyx* scales woolly, skinny at the edges. *Florets* of the circumference, 5; *border* nearly circular, bent back, slightly cloven into 3; those of the centre 15 or more, but not more than four or five expanding at once.

Var. 2. Blossoms purplish red; sometimes nearly crimson.

Yarrow. *Millfoil.* Meadows, pastures, and road sides.

P. June—Aug.†

\* The roots have a hot biting taste. The young tops are sharp and pleasant in spring sallads. The powdered leaves excite sneezing. Horses, cows, sheep, goats, and swine eat it.

† The flowers yield an essential oil. The leaves (and flowering heads *E.*) are celebrated by the *Materia Medica* writers (as stimulant and stomachic, in infusion, *E.*) but little attended to at present. Sheep and swine eat it. Horses, cows, and goats are not fond of it.

## FRUSTRANEA.

**CENTAUREA.** *Recept.* bristly: down either feathered or hair-like: *florets* of the circumference funnel-shaped, irregular, longer than the others.

(1) *Scales of the calyx serrated with fringe.*

C. Calyx scales serrated; leaves strap-shaped, very entire; Cy'anus. the lower ones toothed.

*Curt.*-*Fl. dan.* 993-*E. bot.* 277-*Kniph.* 6-*Ludw.* 55-*Sheldr.* 44-*Blackw.* 270-*Walc.*-*Dod.* 251. 1-*Lob. obs.* 296. 1, and *ic.* i. 546. 2-*Ger. em.* 732. 2-*Park.* 482. 2-*Pet.* 22. 4-*Fuchs.* 428-*J. B.* iii. 21. 3-*Ger.* 592. 2-*Trag.* 56-*Lonic.* i. 182. 1-*Matth.* 508-*H. ox.* vii. 25. 4.

*Leaves*, the lowermost sometimes very entire. Mr. HOLLEFEAR. *Stem* one to two feet high, angular, firm, slightly cottony, branched upwards. *Leaves* numerous, whitish and cottony underneath, with three parallel ribs. *Branches* with one flower. *Calyx* scales spear-shaped, the outer green, tinged with purple, cottony, sharply serrated; serratures smooth, skinny, purplish without, white within, sometimes white on both sides; the inner entire. *Florets* of the circumference, segments spear-shaped, pointed; those of the centre, segments rather shorter than the anthers. *Pistil* in the florets of the circumference none. *Summit*, in the hermaphrodites triangular, purplish, rather shorter than the anthers. *Down* short, hair-like. Mr. WOODWARD. *Stem* angular, with small tufts of white wool. *Leaves* with three ribs. *Calyx* edged with brown, skinny, spear-shaped teeth. *Hermaphrodite florets*, the border filled with a honey-like juice. *Filaments* surrounded just below the anthers with a fringe of silvery glandular hairs. *Anthers* almost black, horny at the top. *Style* a little hairy just beneath the summit. *Summit* cloven. *Blossom* generally a fine bright blue, sometimes white, and sometimes a beautiful purple.

*Blue-bottle. Corn-flower. Knapweed. Cornfields.*

A. June-Aug.\*

\* The expressed juice of the petals makes a good blue ink; it stains linen of a beautiful blue, but the colour is not permanent in the mode it has hitherto been applied. Mr. Boyle says, the juice of the central florets, with the addition of a very small quantity of alum, makes a lasting transparent blue not inferior to ultramarine. *Gent. Mag.* 1748. Cows, goats, and sheep eat it. Horses and swine refuse it.

*nigra*.

*C.* Calyx scales egg-shaped, fringe hair-like upright; lower leaves lyre-shaped, angular; upper ones egg-strap-spear-shaped, and nearly entire.

Var 1. Flowers without rays.

*Fl. dan.* 996—*E. bot.* 278—*Walc.-Reich. fl.*—*Chus.* ii. 7. 2—*Dod* 124. 2—*Lob. obs.* 292. 3, and *ic.* i. 541. 1—*Ger. em.* 727. 1—*Park.* 468. 1—*H. ox.* vii. 28. row. 2. 1—*Pet.* 22. 8—*J. B.* iii. a. 27.

Differs from *C. phrygia* in the fringed little scales being egg-shaped, between upright and open, and not bowed back and awl-shaped. Like to *C. Jacea*, but without neutral florets in the circumference. LINN. Stem angular, scored, slightly cottony, often tinged with purple. Branches alternate, the upper ones rising above the stem, thickest towards the top, with one flower. Leaves wing-cleft, or toothed, sometimes entire, spear-shaped, sitting, more or less cottony. Calyx outer scales spear-shaped, dark purple, almost black, with a long fringe, hairy; the middle ones yellow, strap-shaped below, spear-shaped and fringed at the end; the inner whitish, smooth, shining, strap-shaped, terminated by a broad, roundish, purple, little-scale, convex without, concave within, ragged, not fringed. Florets all alike. Tube whitish, long. Border purple, longer than the anthers. Style shorter than the anthers, with a downy ring beneath the summit. Summit slightly cloven. WOODWARD. Upper leaves either egg or strap-shaped, and sometimes entire.

(We find in *E. bot.* 1678 what Dr. Smith conceives to be the real *C. Jacea* of Linnæus, said to have been discovered in Sussex by Mr. W. Borrer. From the Botanist's Guide we further learn that a single plant was found in a meadow near Henfield, by the last named gentleman, and in that work it is introduced with doubt and a remark that it chiefly differs from *C. nigra* in its regularly torn calyx-scales. Whether so trifling a distinction be sufficient to constitute a species, and whether even that difference be invariably permanent, we presume to think worthy of further consideration. On examining many specimens of *C. nigra*, we observe the leaves exhibit every variation attributed to *C. Jacea*, and even an approximation in the appearance of the calyx-scales. E.)

Black, or Lesser Knapweed. Meadows and pastures.

P. July—Aug.

Var. 2. Flowers radiated.

This variety is common in Wiltshire, as I learn from Mr. Norris, and Mr. Stackhouse informs me that it is more frequent

in Cornwall, and the West of England, than the sort without rays. It has sometimes been mistaken for the *C. Jacea*, but in that the scales of the calyx are thin, membranaceous or skinny and ragged at the edges, not with a regular fringe of stiff black bristles as in this.

*Outer florets* purple, radiating, divided nearly half way down into five equal strap-shaped segments, without stamens or pistils. Other radiating florets exactly resembling these, but furnished with stamens and pistils. *Central florets* white; anthers and summits purple. *Stem* fluted, cottony. *Lower leaves* spear-shaped, toothed, somewhat hairy; *upper leaves* strap-shaped, very entire. It may possibly prove a distinct species.

C. Calyx scales fringed; leaves wing-cleft; segments spear-shaped. Scabiosa.

*E. bot.* 56—*Matth.* 969—*J. B.* iii. a. 32. 2—*Ger.* 588. 2, and 583. 5.

*Root-leaves* winged, on long leaf-stalks, with a winged mid-rib; wings egg-shaped, toothed, frequently with wing-cleft appendages at the base, the terminating one very large, confluent with the next pair, *stem-leaves* with winged clefts: segments spear-shaped, mostly entire. *Flowers* single, terminating. *Calyx* bellying: scales closely tiled, in several rows, egg-shaped, green, nearly smooth, fringed, tipped and edged with black. *Florets* tubular: those of the circumference without stamens or pistils, reddish purple, scored: segments four, sometimes five. *Anthers* whitish. *Style*, pale below, purplish upwards, with a downy ring beneath the summit. *Summit* cloven. *Seeds* oval, brown, compressed, shining: viewed with a glass slightly hairy. *Down* yellowish, bristly, as long as the seed. Mr. WOODWARD. *Stem* nearly cylindrical, scored, (two or three feet high. E.) *Leaves* roughish, and a little hairy. *Calyx* globular: scales black, green at the base, fringed with light brown hair. *Florets* of the centre marked on the outside with five dark purple lines, the tube and distended border filled with a honey-like juice. *Filaments* a little woolly. *Anthers* shining, dark purple. *Summit* cloven. *Fruit-stalks* long, naked. *Blossoms* purple, sometimes white.

*Greater Knapweed.* Matfellow. Borders of cornfields.

P. July



(2) *Calyx thorny; thorns compound.*

**Calci'trapa.** C. Calyx sitting, almost doubly thorned; leaves wing-cleft, segments strap-shaped, toothed; stem hairy.

*E. bot.* 125—*Kniph.* 11—*Ger.* 1003. 1—*Col. phyt.* 24—*Clus.* ii. 7. 3—*Dod.* 733—*Lob. obs.* 482. 2, and *ic.* ii. 11. 2—*Ger. em.* 1166. 1—*J. B.* iii. a. 89—*Park.* 988. 1—*Pet.* 21. 11—*Ger.* 1003. 2—*Lonic.* i. 72. 2.

*Stem* proliferous. *Calyx* thorns white. *Blossom* purple, not yellow, sometimes white. LINN. *Thorns* yellowish. (*Florets* of the circumference scarcely longer than the disk, not quite regular. *Seeds* inversely egg-shaped, variegated, shining. *Fl. Brit. E.*)

*Star Thistle. Star Knapweed.* Barren meadows and road sides. [Yarmouth Denes, near the sea, with a *white blossom*, frequent. Mr. WOODWARD. Bethnal Green. Mr. JONES. Sandsend near Whitby, Yorkshire. Mr. ROBSON. Road sides North of Bedford, common. Mr. PITT.] A. July—Aug.

**solstitia'lis.** C. Flowers solitary; calyx thorned; branch-leaves decurrent, without thorns, spear-shaped; root-leaves lyre-wing-cleft.

*E. bot.* 243—*Kniph.* 8—*Dod.* 734. 1—*Ger. em.* 1166. 2—*Park.* 989. 4—*Pet.* 21. 12—*Col. ecphr.* 31—*Lob. adv.* 372, and *ic.* ii. 12. 1.

*Root* fibrous. *Stem* two feet high, branched, open. *Root-leaves* lyre-shaped, tapering: lateral segments spear-shaped, toothed, the terminating one winged, triangular, halberd-shaped: *stem* and *branch-leaves* very entire, short, waved, sprinkled with a white cobweb-like wool. *Flowers* terminating, solitary. *Fruit-stalks* very long, leafy. *Calyx* egg-shaped, without any leaf at the base: scales white, those which surround the base, longest, only toothed at the base, with hand-shaped, short, and nearly equal thorns, the rest with awl-shaped thorns as long as the calyx, and armed on each side with lesser thorns. *Blossoms* yellow. LINN.

*St. Barnaby's Thistle, or Knapweed.* Cornfields and hedges. Not far from Cirencester, Gloucestershire; and Northfleet, Kent. In a field at Arminghall near Norwich. Mr. CROWE. Linn. Tr. ii. 236. A. July—Aug.

## NECESSARIA.

**CALENDULA.** *Recept.* naked : down none : *calyx* of many, nearly equal leaves : *seeds* of the centre, mostly membranaceous.

**C.** Seeds boat-shaped, prickly, turned inwards ; the innermost crowded together, the outermost upright, furnished with a tail. *arven'sis.*

*H. ox.* vi. 4. 6—*Tabern.* 713—*Ger.* 603—*J. B.* iii. 103.

Nearly allied to *C. officinalis*. *Leaves* somewhat toothed, but heart-spear-shaped, not spatula-shaped. **LINN.** (*Stem* leafy, three to five inches high. **E.**) *Leaves*, the upper ones heart-shaped, lower ones strap-egg-shaped, all of them embracing the stem. *Flowers* yellow, but not near so large, nor of so deep a yellow as the cultivated *C. officinalis*.

*Marigold.* [On Ballast-hill, Sunderland, Durham. Mr. ROBSON. On the shores of the harbour at Falmouth.]\*

\* This is a very common plant in the cornfields and vineyards of Portugal, and is used as food for milking cows. The milk yielded by the cows which are fed upon it is very good. When we consider the constant intercourse maintained between Portugal and Falmouth, it is not improbable that the seeds of the plants I found might have been imported from thence : and in a similar manner have several other exotics been introduced, and in time become naturalized ; and this conjecture is particularly illustrated by the various other foreign plants now to be found on Ballast-hills, near Sunderland, Durham ; and in other like situations.

## CLASS XX.

## CRYPTOGAMIA.

## MISCELLA'NEÆ.

- EQUISE'TUM.....*Fructifications* forming an egg-oblong, terminating spike.
- LYCOPO'DIUM.....*Capsules* axillary, solitary, naked, kidney-shaped, with 1' cell, and elastic valves.
- PILULA'RIA.....*Capsules* 4-celled, globular, sessile in the bosom of the leaves at each joint.
- ISOE'TES.....Male flowers solitary, within the base of the inner leaves.  
Fem. solitary, within the base of the outer leaves: *Capsules* 2-celled.

## FI'LICES.

(1) *Capsules without an elastic ring; in Spikes.*

- OPHIOGLOS'SUM.....*Capsules* united by an enveloping membrane, so as to form a 2-rowed, jointed spike.
- OSMUN'DA.....*Capsules* distinct, 2-valved, forming a bunch-like spike.

(2) *Capsules roundish, on pedicles, encompassed by a jointed elastic ring; and opening irregularly into 2 parts.*

- ACROS'TICHUM.....*Capsules* covering the whole under surface of the leaf.

- POLYPO'DIUM . . . . . *Capsules* forming distinct roundish spots on the under surface of the leaf.
- ASPLE'NIUM . . . . . *Capsules* forming straight scattered lines on the under surface of the leaf.
- BLECH'NUM . . . . . *Capsules* forming lines adjoining and parallel to the ribs of the leaves.
- PTE'RI'S . . . . . *Capsules* forming a line at the edge of the leaf.
- ADIAN'TUM . . . . . *Capsules* forming oval spots under the reflected points of the leaves.
- TRICHO'MANES . . . . . *Capsules* solitary inserted on the very edge of the leaf.

## MUS'CI.

- SPHAG'NUM . . . . . *Capsules* mouth not fringed, covered with a lid; without a veil.
- SPLACH'NUM . . . . . *Capsule* on a large fleshy receptacle: *Veil* very large.
- POLY'TRICHUM . . . . . *Capsule* on a very small receptacle: *Veil* hairy.
- MNI'UM . . . . . *Capsule* with a lid: *Veil* smooth: *Fruit-stalk* not issuing out of a fleshy receptacle.
- PHAS'CUM . . . . . *Capsule* with a veil, and the rudiment of a lid which does not fall off.
- BRY'UM . . . . . *Capsule* with a lid: *Veil* smooth: \* *Fruit-stalk* terminating, issuing out of a fleshy tubercle.

\* In BRYUM sessile, tectorum, & striatum, the veil is hairy.



## CRYPTOGAMIA.

**HYP'NUM**.....Capsule with a lid: *Veil* smooth.  
Fruit-stalk lateral, issuing from  
a tubercle surrounded with  
scales.

**FONTINA'LIS**.....Capsule veiled, sitting, enve-  
loped by the scales of the re-  
ceptacle.

**BUXBAU'MIA**.....Capsule on a fruit-stalk, membra-  
naceous on one side.

## HEPATICÆ.

**MARCHANTIA**.....Male, *Calyx* salver-shaped, with  
numerous anthers imbedded  
in its disc.

Fem. *Calyx* target-shaped, flow-  
ering underneath: Capsules  
bursting at their tops: Seeds  
attached to elastic fibres.  
(*E. bot.*)

**JUNGERMAN'NIA**.....Capsules on fruit-stalks, naked,  
4-valved.

**TARGIO'NIA**.....*Calyx* 2-valved: Seeds very nu-  
merous, collected into a globe.  
(*E. bot.*)

**ANTHOCEROS**.....Capsules awl-shaped, 2-valved:  
Seeds connected with the  
valves.

**BLA'SIA**.....Sheath cylindrical, protruding  
globular buds from its bottom.

**RIC'CIA**.....Fructifications granules buried in  
the leaf. (*Gmelin.*) Anthers  
cylindrical, sitting on the  
germen; perforated by the  
style: Caps. globular, crown-  
ed by the withered anthers:  
Seeds hemispherical, on pe-  
dicles. (*E. bot.*)

## AL'GÆ.

- LICHEN ..... Male, scattered warts.  
                                     Fem. smooth saucers or tubercles  
                                     in which the seeds are imbed-  
                                     ded. (*E. bot.*)
- TREMELLA ..... Seeds dispersed through a jelly-  
                                     like substance.
- UL'VA ..... Seeds dispersed through its sub-  
                                     stance, growing in water.  
                                     (Frond membranous or gelatin-  
                                     ous. *E.*)
- BYSSUS ..... Substance, wool-like fibres.
- CONFER'VA ..... Fibres hair-like, simple or branch-  
                                     ed, often jointed; (growing in  
                                     water. Or according to the re-  
                                     formed character established  
                                     by Mr. Dillwyn and Dr. Smith.  
                                     Seeds produced within the sub-  
                                     stance of the capillary or joint-  
                                     ed frond, or in closed tuber-  
                                     cles united with it. *E.*)
- FU'CUS ..... Substance leather-like: Fruit glo-  
                                     bular, capsule-like; or granu-  
                                     lations within the substance,  
                                     with an open pore above them.

## FUN'GI.

(1) *Seeds on the under surface.*

- MERU'LIUS ..... *Pileus* with Gills underneath, of  
                                     the same substance with the  
                                     rest of the plant.
- AGA'RICUS ..... *Pileus* with Gills underneath, of  
                                     a different substance from the  
                                     rest of the plant.

## CRYPTOGAMIA.

- FISTULINA ..... *Pileus* with separate tubes underneath: *Seeds* in the tubes.
- BOLETUS ..... *Pileus* with united tubes underneath: *Seeds* in the tubes.
- HYDNUM ..... *Pileus* with solid cylinders underneath: *Seeds* on the cylinders.
- HELVELLA ..... *Pileus* on a stem, smooth underneath: *Seeds* on the under surface.
- AURICULARIA ..... Flat, membranaceous, fixed when young by the whole under surface: *Seeds* on the upper surface which becomes reversed as it attains maturity.

(2) *Seeds on the upper surface.*

- PEZIZA ..... Cup-shaped or concave; *Seeds* discharged by jerks from the upper surface only.
- NIDULARIA ..... Leathery; sitting; bell-shaped: *Capsules* large, flat, fixed to pedicles at the bottom of the bell.
- PHALLUS ..... Stem supporting a cellular head: *Seeds* in the cells.

(3) *Seeds on every part of the surface.*

- CLAVARIA ..... Oblong, upright, club-shaped: *Seeds* emitted from every part of its surface.

(4) *Seeds in the substance of the plant.*

- TUBER ..... Fleshy, solid, not becoming powdery; not opening at the top.

LYCOPER'DON.....Firm, fleshy, becoming powdery  
and fibrous within; opening  
at the top.

RETICULA'RIA.....Pulpy, changing to friable; open-  
ing indiscriminately: *Seeds*  
lodged in interlacing fibres  
or membranaceous cases.

SPHÆ'RIA .....Fruit spherical, filled with black  
powder, mostly concealed by  
an outer coat; opening at the  
top.

TRICHIA.....*Capsule* globular, egg-shaped or  
cylindrical, composed of inter-  
woven fibres: *Stem* fixed to a  
membranaceous base.

MU'COR.....*Stem* very slender: *Seeds* naked  
or in capsules at the ends of  
the stem.

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### MISCELLANÆ.

EQUISETUM. *Spike* club-shaped, egg-oblong: *sylvaticum*.  
*fructifications* target-shaped, opening in-  
wards.

E. Stem bearing a spike; leaves compound.

*Hedw. Theoria.* 1-*Fl. dan.* 1182-*Bolt. fil.* 33-*Ger.* 957,  
*misprinted* 953. 5-*C. B. th.* 245-*Park.* 1201. 5-*Bolt.*  
*fil.* 32.

The entire *plant* very much resembling in figure a fir-tree,  
its leaves being all in whirls. LINN. *Stem* from seven to fifteen  
inches high, smooth, slightly scored, pale yellowish brown.  
*Sheaths* of the same colour, but deeper, *Leaves* 8, 10, or 15 in  
a whirl, bursting out from the upper knot of the stem. *Fructi-*  
*fications* about 15 in a whirl towards the bottom of the spike.



*Anthems* fixed to filaments, which, on being breathed upon, coil up, but in a moment becoming dry, they expand again. After several expansions and contractions they detach themselves, still contracting when moistened, gradually bending from a straight line into a circle. If a drop of water be pushed towards them, they contract before it touches them. [These contractions are often so sudden as to throw the object out of the field of view.]

*Wood Horsetail.* Moist woods and shady places near rivulets, and in boggy ground. P. April—May.

Var. 2. Leaves pointing all one way. *R. Syn.* 131. 5. This happens when the stem has been trodden down.

Var. 3. Leaves very long and very slender. *R. Syn.* 131. 6.

In shady and moist situations. It is a variety of *E. palustre*. BOLT. Leaves of a pale yellow green colour. *Ibid.*

I believe this change in the habit occasionally takes place in both species, and indeed more or less so in almost every plant in similar situations.

arven'se.

E. Fertile stalk leafless; barren stem leafy, lying down; leaves in whirls.

*Curt.* 285—*Bolt. fl.* 34—*Kniph.* 1—*Dod.* 73. 2—*Lob. ic.* i. 795. 2—*C. B. th.* 247, the right hand part of the figure—*Blackw.* 217. 3 and 4—*Fuchs.* 322—*J. B.* iii. 730. 1—*Trag.* 692. 2—*Lonic.* i. 176. 2—*Matth.* 1027—*Cam. epit.* 771—*Dod.* 73. 4—*Lob. obs.* 461. 3. *ic.* i. 794. 2—*Ger. em.* 1114. 5—*Park.* 1202. 11—*Fuchs.* 322—*J. B.* iii. 729. 2—*Ger.* 956. 3.

*Fertile stems* appearing before the other; soon decaying. *Barren stems* continuing a long time. LINN. *Barren stems* rough, slender. *Leaves* 12 to 15 in a whirl, somewhat branched. LEERS. *Stalk* from a hand's breadth to a foot high, cylindrical, smooth, jointed, the upper knots farther distant, the lower approaching nearer to each other; each joint terminating in a sheath. *Sheaths* furrowed, wider than the stalk, many-cleft: segments spear-shaped, tapering to a point. *Spike* yellowish white, nearly an inch long, the base encircled with a membranaceous yellowish border. *Fructifications* in whirls, yellowish. POLLICH. *Stem* when fresh roughish, in moist shady situations smooth and somewhat shining. *Sheaths* in such situations scored with green. *Sheaths* with four teeth corresponding to the angles of the leaves, of the same colour with the leaves. WOODWARD. *Root* cylindrical, with threads from the joints, stiffish, woolly, dark brown. *Stalk* fleshy, with several cylindrical tubes

within, a central one, with nine others, three or four times smaller, disposed in a circle round it; and another nine exceedingly minute between them and the central one; yellowish brown, semitransparent, obscurely marked with nine scores. *Sheaths* somewhat bellying, of a silvery brown, with nine furrows: segments nine, pointed, somewhat approaching. *Stalks*, sheaths furrowed as the stem, cloven one third of the way down: teeth blackish brown at the ends, with very shallow white membranaceous edges. *Leaves*, the joints of the upper branches frequently three-square, and the joints terminating in three teeth: teeth open. *St.* The fertile stems not to be distinguished from those of the *E. sylvaticum* before the leaves appear, but by observing that the sheaths in the *E. sylvaticum* are divided into twelve segments, but in this species only into three or four.

*Corn Horsetail.* Moist cornfields. P. March—April.

*E. Stem angular; leaves unbranched.*

palus'tre.

*Bolt.* fl. 35; *Barren plant* 16. 37—*Fl. dan.* 1183—*Lob. ic. i.* 795. 1—*Ger. em.* 1114. 4—*Park.* 1200. 3—*Trag.* 694—*Lon. i.* 176. 3—*C. B. th.* 247, *left hand stem*—*Gars.* 258. *B. fructification*—*Hedwig. Th.* 2. 8. 9. 10.

*Stem* smooth. *Leaves* six to ten, furrowed, smooth, with black scales at the base. *LEERS.* *Root* black. *Stem* with fewer and deeper scores than that of *E. arvense*, some of the lower joints black, sometimes lengthened out for a considerable way beyond the going off of branches: knots blackish from the sheaths of leaves which rise from the joints. *Leaves* shorter and thicker than those of *E. arvense*, with mostly five and rarely four or six angles. *Sheaths* larger and more lax than those of *E. arvense*, teeth very short, tipped with black, which distinguishes it from the *E. arvense*. *WOODWARD.* *Barren-leaves* resemble those of *E. arvense*, but the second leaves in the *E. arvense* are four-sided, and the sheaths have four teeth, whilst in this species they are five-sided, and the sheaths have five teeth.

*BOLT.*

*Marsh Horsetail.* *Paddock Pipe* in Scotland. Marshy and watery places. P. June—July.

*Var. 2: many-spiked.* Spikes terminating the upper leaves as well as the stem.

*Ray* 5. 3. at p. 160.

This variety generally arises when the primary stem has been bitten off. *BOLT.*

fluviale. *E.* Stem scored; leaves generally unbranched.

*Bolt. fil.* 36. 37—*Fl. dan.* 1184—*Matth.* 1026—*Dod.* 73. 1—*Lob. obs.* 461. 1. *ic.* i. 793—*Ger. em.* 1113. 1—*Park.* 1200. 1—*Ger.* 955. 1—*C. B. th.* 241—*Blackw.* 217. 1 and 2—*Cam. epit.* 770. *B. C.*—*Gars.* 258. *A.*

*Sheaths* cloven into as many pointed teeth as there are leaves. *Leaves* 30 to 40 in a whirl, deeply furrowed, four-cornered, consisting of frequent longish joints. *HALL.* *Sheaths* of the barren stems surrounded at the top with a well defined blackish brown band: *teeth* lighter brown, smaller and narrower than those of the fertile stems. *Leaves* from three to fifteen inches long, very closely set. This species may be readily known at first sight by its great size, numerous leaves, and whitish stem. *WOODWARD.* *Fertile stems* sometimes leafy, so that Haller is mistaken in his assertion that they are leafless.

*River Horsetail.* Marshy and watery places, sides of rivers, ditches, pools, and lakes. [Not very frequent—cold springs at Barnby near Lowestoft; between Bungay and Halesworth; and St. Faiths Newton Bogs near Norwich. *Mr. Woodward.*]

P. May—June.

limosum. *E.* (Catkin terminal. *E. bot.* *E.*) Stem frequently naked, smooth.

*Bolt. fil.* 38—*E. bot.* 929—*Ray* 5. 2. at p. 160—*J. B.* iii. 729.

Closely allied to *E. fluviale*; sometimes throwing out a few leaves. *LINN.* A variety of *E. palustre*. *Stems* thicker and taller, those of younger flowering plants leafless, furrows much more numerous than those of *E. palustre*; teeth of the sheaths finely pointed, brown. *HALL. n.* 1677.  $\beta$ . It differs also as follows:—Whole plant smoother. *Root* yellowish. *Stem* brown below, scored; not furrowed. *Sheaths* close clasping the stem, the teeth of the lower brown, those of the upper black, and smaller than those of *E. palustre*. *Leaves* either straggling here and there, or in whirls on the middle part of the stem. *Head* dark brown, but not so dark as in *E. palustre*, also larger. For the above reasons I cannot think it a variety of *E. palustre*. *WOODWARD.* *Stems* exactly cylindrical, those which bear fructifications after flowering becoming leafy, and sometimes throwing out lateral branches; those which are barren tapering gradually to the end, and mostly continuing bare of leaves. The shoots of next year upwards of an inch long, from the side of the stem at the knots, which throw out fibrous roots. *St.* (*Stems* erect, two feet high. A much smaller plant than the *E. fluvia-*



tile of LINN. whose principal stems are whirled from top to bottom with numerous very long spreading branches, and produce no catkins. *E. bot. E.*)

We are favoured with the following curious description, by JAMES NORRIS, Esq. "In the month of March 1794, being on a boggy spot of ground near Bromham, where a small stream, by a continued action on the loose soil beneath, had formed a deep channel, my attention was soon directed to the roots of an *Equisetum*, growing abundantly on the brink of both its perpendicular sides; which presented them laid bare to view, and cleansed by the passage of the water. The roots which, as in all the species of this genus are jointed like the stem, were surrounded at their joints by a series of 6, 7, or 8 bulbs, arranged verticillately, sessile, and about the size of a nutmeg, but shaped like a fig, with a prominent umbilicus at the larger end: when young of a tawny brown colour and downy, when old black and smooth: the pulp within white, and similar in consistence to apple or potatoe. In the succeeding month of April, I had the pleasure to observe many of these bodies in a state of vegetation, some still attached to the parent root, others separate. The young plants were then about a finger's length, issuing from the umbilicus at the great end, from whence also radical fibres were protruded downwards, and this accompanied with a proportionable loss of juice in the sustaining bulb. These were very different in strength, size, and appearance, from the recent shoots immediately proceeding out of the parent root. None of the bulbs were found within a foot or more of the horizontal surface of the earth." These bulbs differ much in dimensions from the size of peas to three quarters of an inch in diameter. If the full grown bulbs be detached and placed in a vessel of water, the process of vegetation may be conveniently attended to, for the young shoots, in a few days, will burst from the umbilical prominence, accompanied by their radical filaments.

*Smooth Horsetail.* Common in the beds of rivers near the banks; also shallow ponds, and ditches in marshes.

P. May—June.

*E. Stem naked, rough, somewhat branched at the base.*

hyemale.

*Bolt. fil. 39—E. bot. 915—Cam. epit. 770. A.—Ger. 955. 2—Ger. em. 1113. 2—Park. 1021. 7. 8, right hand figure.*

*Stem* perennial, green, rough like a file. *Sheaths* of the joints pale, black at the base and edges, with imperfect teeth. LINN. *Stems* furrowed with 18 or 20 rough angles, some of the joints three inches asunder. *Sheaths* with as many short blunt teeth as the stem has furrows. *Spike* terminating. LIGHTFOOT.



Differs from *E. limosum* in being sea-green, in the greater length of its joints, and in its extreme roughness. **WOODWARD.** (*Roots black, and creeping. E. bot. E.*) *Rough Horsetail. Dutch Rushes.* Marshy and watery places, but not common. In a moist ditch near Middleton, Warwickshire, and in a rivulet near Broad-stitch Abbey, Wiltshire; Scippon and Craven, Lancashire, and in Rigby Woods, MEER. Gamlingay Bogs, Cambridge-shire. [Riser side between Mavis Bank and Laswade near Edinburgh; near Norwich. Dr. J. E. SMITH. Armingdale Wood near Norwich. Mr. CROWE. Just below Stone Bier Linn, near Lanerk, Scotland. Sr. Sexton Wood, Hedenham, near Bungay. Mr. STONE.] (Near Rippon, Yorkshire. Mr. W. BRUNTON. E.)

P. July—Aug.\*

Var. 2. Stem with a few leaves. **HALL.**

*Trag.* 692. 1—*Lon.* 11. 176. 1—*J. B.* iii. 729. 1—*C. B.* 248.

Var. 3. With numerous lateral branches. **St.**

*Matth.* 1028—*Dod.* 73. 3—*Lob. obs.* 461. 2. ic. i. 794. 1—*C. B.* 250.

When it has been browsed early in the spring, it puts out numerous lateral branches. **Mr. GRIFFITH.**

**LYCOPO'DIUM.** Capsules axillary, kidney-shaped, 2-valved, elastic; many-seeded.

clava'tum.

**L.** Leaves scattered, terminating in threads: spikes cylindrical, on fruit-stalks, in pairs.

*Dicks. h. s.—E. bot.* 224—*Dill.* 58. 1—*Fl. dan.* 126—*H. ex.* xv. 5. row 1. 2—*Gesn. i. tabula picta, f.* 2—*Blackw.* 535—*Pluk.* 47. 8—*Trag.* 555—*Lon.* i. 179. 1—*Ger.* 1374. 11—*Matth. a. C. B.—Lob. obs.* 645. 1, ic. i. 244. 2—*Ger. em.* 1562. 11—*Matth.* 63—*Park.* 1307. 4—*J. B.* iii. 766.

*Stem* creeping. *Leaves* open. **LINN.** Shoots from one to several feet in length, firmly attached to the earth by woody

(Dr. Smith remarks that the stems have been long imported from Holland to polish cabinet-work, ivory, and even brass. Their cuticle is extremely rough and hard; the ingenious Mr. Davy, lecturer at the Royal Institution, has found it to contain a large portion of siliceous earth. *E. bot. E.*) It is wholesome to horses, hurtful to cows, and disagreeable to sheep.

fibres. *Branches* expanding, distant, trailing; the lower ones again subdividing into forks. *Leaves* closely tiled, strap-spear-shaped, pointed, and hooked, with long white hairs at the end. In the summer, from the ends of the branches, the fruit-stalks rise up, almost leafless, jointed, straight, rigid, from two to four inches high, dividing at the top into two or three cylindrical, flowering spikes. *Spikes* closely tiled with scales or husks, egg-spear-shaped, pointed, hairy at the end, ragged at the edges. Each of these scales incloses a kidney-shaped yellow capsule, exploding when ripe a yellow powder, which resembles sulphur, and burns with an explosion. *Weiss.* *Fruit-stalk* generally with two equal spikes, frequently with one, and sometimes with three, which are unequal. *Mr. Gough.*

\* *Common Club-moss.* *Wolf's-claw.* Dry places on mountains, heaths, and woods. Hampstead and Hounslow Heaths, near Esher. [Monshold Heath, near Norwich. *Mr. Pitchford.* Derbyshire, and the North. *Mr. Woodward.* Cannock Heath, Staffordshire.] P. July—Aug.\*

L. Leaves scattered, fringed, spear-shaped; spikes soli-Selaginoides. tary, terminating, leafy.

*Dill.* 68, *Selaginoides*—*Fl. dan.* 70—*E. bot.* 1148—*Scheuch.* it. i. 6. 1. at. p. 43—*Hall. enum.* 3. 1. at. p. 109. and hist. 46. 1, at iii. p. 56—*H. ox.* xv. 5. row 2. 11, the lower part of the figure, the upper being *L. inundatum*, *Pluk.*

*Capsules*, those at the base of the lower leaves when viewed sidewise apparently in threes, but really in fours, one pair above and the other pair below; at length gaping, and disclosing as many large solid seeds; those at the base of the upper leaves yellower, of a looser texture, entirely simple, round, not containing seeds, but pollen. *LINN.* *Plant* from one to three inches high.

*Prickly Club-moss.* Mountainous heaths and pastures. In Scotland, the North of England and Wales. [Mountains in Westmoreland. *Mr. Woodward.* Rocks above Ffynnon frea Lanberis. *Mr. Griffith.*] (Near Middleton, in Teesdale, Durham, E.) P. June—Sept.

\* In Sweden this plant is formed into mats which lie at the doors of houses to clean shoes upon. It restores ropy wine in a few days. The seeds flash when thrown into a flame, and it is said are used in the Theatres to imitate lightning. They are with difficulty made wet, and if scattered upon a bason of water the hand may be dipped to the bottom of the bason without wetting it.

*inundatum*. L. Leaves scattered, very entire; spikes terminating, leafy.

Dicks. h. s.-E. bot. 239-Fl. dan. 336-Dill. 61. 7-Vaill. 16. 11-H. ox. xv. 5. row 2. 11, the middle and upper branches, the rest belonging to *L. Selaginoides*.

Stem creeping. Spikes solitary, sitting, smooth, LINN. branched; the length of a finger or more; cylindrical. Spikes sitting, upright. Leaves awl-shaped, pointed, smooth, on the creeping shoots pointing one way, two lines long, and one broad at the base. POLLICH. Shoots creeping, pointing one way, those bearing spikes an inch long, upright, cylindrical. Leaves strap-shaped, crowded, without terminating hairs. Spikes leafy, not different from the shoots except in being thicker. Capsules compressed, roundish, not kidney-shaped. WEBER.

Marsh Club-moss. Moist heaths and turf bog, Hounslow Heath, and near Esher. [Near Norwich, Ellingham Fen near Bungay, Suffolk. Mr. WOODWARD. On Norton Bog, Cannock Wood, Staffordshire. Hon. Mr. BAGOT.]

P. June-Sept.

*Selago*.

L. Leaves scattered; pointing 8 ways; stem forked; upright; branches all of the same height; flowers scattered.

E. bot. 233-Dill. 56. 1-Fl. dan. 104-H. ox. xv. 5, row 2. 9-Scheuch. it. i. 6. 2.

Leaves obliquely disposed in eight rows, which may be best observed by looking at them, holding the ends of the branches perpendicular to the eye. LINN. Stems upright, branched, from three to seven inches high, forked; branches again forked, closely covered with leaves. Leaves spear-shaped, sharp-pointed, stiff, smooth, shining, scolloped or serrated, and cartilaginous at the edge. Capsules in the bosom of the upper leaves, kidney-shaped, flattened, yellow, opening like an oyster, and pouring out a pale yellow powder. WEIS. Root dividing into forks like the stem. DILL. This powder, when sown by Mr. Fox, produced young plants; a complete demonstration that it is the seeds, and not as Linnæus thought, the pollen. LINN. Tr. ii. 315. The whole plant very firm and stiff; from two to five inches high.



*Fir-leaved Club-moss.* Mountainous heaths, in the clefts of rocks in Yorkshire, Lancashire, Westmoreland, Cumberland, the Highlands and Hebrides. Near the top of Ingleborough, Yorkshire. CURTIS, obs. 132. [Mountains in the North, Mr. WOODWARD. On Dartmoor, Devon. Needwood Forest, Staffordshire.] April—Oct.\*

L. Leaves scattered, pointing 5 ways; somewhat serrated; stem jointed at each year's shoot; spikes terminating, smooth, upright. *anno'tinum.*

Dill. 63. 9-H. or. xv. 5, row 1. 3-Fl. dan. 127-Pluk. 205. 5.

Branches contracted at the last year's shoots, as in the female of the *Polytrichum commune*. Leaves whirled, in fives, expanding, decurrent. LINN. Root branched. Trailing stem very long. Upright shoots from one to two inches and a half high, generally branched, supporting the spikes of fructification.

*Welch Club-moss.* On the mountains of Caernarvonshire. RAY. Syn. [About two hundred yards South West of Llyn y Cŵn, Caernarvonshire. Mr. GRIFFITH.]

P. June—Sept.

L. Leaves pointing four ways; tiled, acute; stems upright, cloven; spikes sitting; cylindrical. *alp'num.*

E. bot. 234-Dill. 58. 2-Fl. lapp. 11. 6-Fl. dan. 79-J. B. iii. 767. 1.

Stem creeping, from a span to a foot long. Branches alternate, at an inch distant from each other, upright, forked, of the length of a little finger. Little branches bundled, from twenty to thirty together, exactly four-cornered, the angles blunt. Leaves thickish. Fruit-stalks terminating a branch here and there, scarcely two or three lines high, forked, scarcely distinguishable from the branches, covered with smaller leaves, bearing as many spikes. Spikes egg-shaped, nearly smooth. LINN. All the branches divided, and frequently subdivided into forks.

\* It purges, vomits, and destroys worms. A decoction of it is a cure for lice in swine and cattle. LINN. Its properties seem to challenge further inquiry.



CRYPTOGAMIA. MISCELLANEOUS. *Pilularia*.

**DILL.** Upright shoots an inch and a half to three inches long; thinner than the spikes which they support.

**Mountain Club-moss.** Mountainous heaths in Yorkshire, Cumberland, and the mountains of Wales, the Highlands and Hebrides. [Near the top of Ingleborough, Yorkshire. **CURTIS. obs.** 133. Near the Holme, about five miles from Burnley, Lancashire. **MR. WOODWARD.** On Yew barrow, in Furness Fells, along with *L. Selago*. **MR. JACKSON.**]

**P. July—Oct.** which examined in the microscope appears spherical, somewhat transparent, and having three ribs meeting in a centre. **MR. WOODWARD.** Leaves so brittle that they break

**PIULARIA.** *Calyx* common woolly, globular, 4-celled; opening in four directions: *anthers* many; sessile: *pistils* many: *style* none.

globulifera. **P.**

**E. bot.** 521—**Dill.** 79—**Fl. dan.** 223—**Bull.** 375—**Bolt.** 40—**Pet.** 9. 8—**Vaill.** 15. 6—**Pluk.** 48. 1—**H. or.** xv. 7. 49.

**Stem** slender, trailing, striking root at the joints, and sending out delicate slender leaves, two or three inches long, generally three from a joint. **Fructifications** globular, like peppercorns, on very short pedicels at the base of the leaves.

**Pillwort. Pepper-grass. Pepper-moss.** In grounds that have been overflowed, especially in a sandy soil. Near Streatham Wells, Petersfield; and on Hounslow Heath. [Hainford and Stratton Heaths, Norfolk. **MR. CROWE.** St. Faith's Newton Bogs. **MR. PITCHFORD.** About two miles from Mold, on the North side of the Chester road, near Clawdd Offa, or Offa's Dyke. **MR. GRIFFITH.** Various bogs in Angus and Perthshires. **MR. BROWN.**] (Childwall Common, near Liverpool. **DR. BOSTOCK. E.**) **P. June—Sept.**

**ISOETES.** Male. *Anthers* sessile within the base of a leaf.

Fem. *Capsule* 2-celled, within the base of a leaf.

lacus'tris. **L.** Leaves awl-shaped, semi-cylindrical, bowed back.

*Bolt. 41—Fl. dan. 191—E. bot. 1084—Dill. 80. 2—Ray. ed. 1.*  
2. at p. 1.

*Root* fibrous; fibres numerous, simple, slender, striking deep into the mud. *Leaves* growing in thick tufts, six or seven inches long, extremely like young rushes, convex on the back, flat, or slightly convex in front; at the base swelling into a kind of bulb, covered by a thin tender skin, which bursts and discovers it to be filled with numerous minute whitish seeds, which examined in the microscope appear spherical, roughish, somewhat transparent, and having three ribs meeting in a centre. Mr. WOODWARD. *Leaves* so brittle that they break on the least attempt to bend them. The transverse diaphragms very visible. I have often found it in seed. Mr. GRIFFITH.

*Quillwort.* At the bottom of lakes. [In Ffynnon frech, a small lake near the top of Snowdon. *R. Syn.* Mr. GRIFFITH. Near Llanberris, and Lyn Ogwen; near the top of Snowdon; Loch Tay, and other Highland lakes. Lyn y Cŵn near Snowdon. PENNANT. Derwent Water, Cumberland. Mr. WOODWARD. Loch Lomond. Dr. HOPE. Loch of Clunie, Perthshire, abundant. Mr. BROWN. In white Meer, near Ellesmere. Mr. GRIFFITH.]

P. May—Sept. [In seed in July. Mr. GRIFFITH.]

Var. 2. HUDS.—*Dill. 80. 1*; I have often found a plant resembling this, but never could find it in seed. Mr. GRIFFITH.

*Leaves* not so stiff, from the base of which rises a stem throwing off shoots at different distances. RICHARDSON, in *R. Syn.*

I apprehend that Richardson here has applied the word stem, to the shoot which connects the offspring to the mother plant.

[I have found leaves of it in Llyn Ogwen, but could not procure an entire plant. Mr. GRIFFITH. At the bottom of Derwent Water. Mr. WOODWARD.]

Var. 3. HUDS. *Leaves* very brittle, sometimes twice as long as those of var. 1, narrower and more pointed, transparent, with many minute pores. RICHARDSON, in *R. Syn.* Grows with variety 1. *ib.* 307.

## FILICES.

**OPHIOGLOSSUM.** *Capsules* numerous, nearly globular, without an elastic ring; united

by a membrane into a 2-rowed spike; opening crosswise when ripe; seeds numerous, minute.

vulgatum. O. Leaf egg-shaped, veinless, bearing the spike. E. bot.

*Dicks. h. s.*—*E. bot.* 108—*Sheldr.* 28—*Fl. dan.* 147—*Fuchs.* 577—*Lonic. i.* 103—*J. B.* iii. 708. 2—*Trag.* 323—*Kniph.* 6—*Cam. epit.* 364—*Park.* 506—*Gars.* 425—*Tourn.* 325. 1—*Bolt.* 3—*Blackw.* 416. 1 and 2—*H. ox.* xiv. 5, row 3. 1—*Barr.* 252. 1—*Matth.* 594—*Ger.* 327—*Dod.* 139. 1—*Lob. obs.* 471. 1; *ic. i.* 808. 2—*Ger. em.* 404. 1—*Fructification, Hedwig. Th.* 4. 20, 21, 22, 23.

*Stem* solitary. *Leaf* egg-spear-shaped, embracing the fruit-stalk. *Spike* strap-shaped, at first green, when ripe brown. Mr. WOODWARD. *Leaf* sometimes slightly lobed with small appendages on one or both sides. BOLT.

*Common Adder's-tongue.* Moist cold meadows and pastures. —Meadows and sides of rivulets in the North of Yorkshire. CURTIS. Love Lane, near Derby. Mr. WHATELY. Near Blymhill, Staffordshire. Mr. DICKENSON. Beddington, near Bungay, Suffolk. Mr. STONE. Near Meltingham Castle, Suffolk, frequent. Mr. WOODWARD. (About Liverpool. Dr. BOSTOCK. E.) Broadmoor, near Birmingham.

P. May—June.

Var. 2. *many-spiked.* Fruit-stalk divided at the top, each branch supporting a spike; BOLT. and the spike itself sometimes dividing into two or three.

*Blackw.* 416. 3—*Bolt.* 1. 1—*Lob. ic. i.* 809. 1—*Ger. em.* 404. 2—*H. ox.* xiv. 5, row 3. f. 2—*H. ox. ib. f.* 3, 4, 5, 6—*Cam. epit.* 364—*Park.* 506, the lesser figures.

OSMUN'DA. *Spike* branched: capsules distinct, sessile, globular, 2-valved; without an elastic ring; opening either vertically or horizontally.

(1) *Fruit-stalks* distinct, rising from the stem at the base of the leaf.

Luna'ria. O. Stalk solitary; bunch lateral; leaf winged, solitary.



*Dicks. h. s.*—*Kniph.* 11—*E. bot.* 318—*Blackw.* 420—*Fl. dan.* 18. 1—*Garid.* 78. at p. 346—*Col. Phyt.* 18—*Cam. epit.* 643. 1—*Bolt. fil.* 4—*Barr.* 252. 3—*H. ox.* xiv. 5. 1—*Lon.* i. 77. 1—*Matth.* 903—*Ger.* 328. 2—*Matth. a. C. B.* 647. 1—*Clus.* ii. 118. 2—*Dod.* 139. 2—*Lob. obs.* 470. 3; *ic.* 1. 807. 2—*Ger. em.* 405. 2—*Park.* 507—*Fuchs.* 483—*J. B.* iii. 710—*Trag.* 914.

Within the base of the stem, early in the spring, may be found a complete rudiment of the next year's plant. LINN. *Wings* of the leaf fleshy, crescent-shaped, semi-circular, and halberd-shaped. It so exactly resembles *Ophioglossum vulgatum* in habit and structure, that they ought by no means to be separated. Mr. WOODWARD. About five inches high. *Leaflets* irregularly scalloped. *Spike*, or rather panicle, from one to two inches long.

*Common Moonwort.* Mountainous meadows and pastures in Westmoreland; near Settle, Yorkshire; Scadbury Park, Kent; and Chisselhurst Common. Mear Bank, by Sykes Wood, Ingleton, Yorkshire. CURTIS.—North side of Bredon Hill, Worcestershire. NASH.—Near Bury. Mr. WOODWARD.—Stratton Heath, Norfolk. Mr. CROWE.—On coalpit banks near Stourbridge. Mr. WALDRON HILL.—(Bootle, near Liverpool. Dr. BOSTOCK. E.) P. May—July.\*

Var. 2. LINN. Leaves and stalks several. CAM.

*Cam. epit.* 644—*Matth. a. C. B.* 647. 2.

Found in England. CAM. *ib.*

Leaves in pairs, doubly winged, wings cut. *Wild. n.* 875.

Var. 3. Leaves cloven into segments.

*Breyn. cent.* 93—*H. ox.* xiv. 5. row. 2. 3—*Fl. dan.* 18. 3.

*Osmunda Lunaria* β. HUDS. BOLT. p. 5.

Westmoreland, and the Northern counties. *R. Syn.*

(Mr. Bolton found a variety on a high knoll in the grounds of Shibden Hall, near Halifax, with leaves shaped like an expanded fan, divided by narrow sections running almost down

\* OBS. *Osmunda Struthiopteris*, *Spicant*, and I believe *crispa*, do not belong to this genus: but *virginica*, *regalis*, and *cinnamomeus* correspond in structure with *O. Lunaria*. These latter, with the genus *Ophioglossum* and perhaps *Onoclea*, which I have never seen in fructification, form a natural family of the tribe of FILICES, distinguishable by the want of the annular elastic ring, which is common to *Osmunda Struthiopteris*, and *Spicant*, and to all the Ferns properly so called, and which unites them and the genera *Acrostichum*, *Polypodium*, *Hemionitis*, *Asplenium*, *Blechnum*, *Lonchitis*, *Pteris*, *Adiantum*, and *Trichomanes*, into another distinct and natural assemblage. ST.



to the base into four or five lobes which are deeply crenated at their extremities. E.)

(2) *The leaf itself bearing the fructifications.*

regalis.

O. Leaf doubly winged; bunches terminating, more than doubly compound.

*Kniph.* 2—*E. bot.* 209—*Pluk.* 181. 4—*Trag.* 543—*Blackw.* 324—*Tourn.* 324—*Fl. dan.* 217—*Bolt.* 5—*J. B.* iii. 736—*Dod.* 463—*Lob. obs.* 474. 1, and 2; *ic.* i. 813—*Ger. em.* 1131—*Park.* 1038—*Ger.* 971—*H. or.* xiv. 4, row. 3. 1—*Gars.* 273—*R. Syn. ed.* i. 1. 2. at p. 1.

*Capsules* opening vertically. Mr. STACKHOUSE. From two to four feet high, of a pleasant transparent green. *Leaves*, doubly winged. *Leaflets* strap-spear-shaped, blunt, finely, but indistinctly, serrated, the lower and younger ones often lobed at the base. The upper wings change into clusters of capsules, and lose all appearance of foliage. *Fructification* when ripe, red brown.

*Osmund Royal. Flowering Fern. Royal Moonwort.* Watery places and boggy marshes. About Cosgarne and Marazion in the mouths of old mines. Mr. WATT.—Bogs near Yarmouth. Mr. WOODWARD.—St. Faith's, Newton Bogs, near Norwich. Mr. CROWE.—Chartley Moss, Staffordshire. Hon. Mr. BAGOT.—(Between Crosby and Formby, near Liverpool. Dr. BOSTOCK.—In Moreton Moors, three miles from Blymhill, Shropshire. Rev. S. DICKENSON.—Moist hedges, New Forest, Hants. This plant, though before not to be found for many miles around Birmingham, in the year 1802, appeared on a butt on Moseley Common, artificially made with mud from a deep pit, in which the seeds had probably lain for a length of time. It continued to flourish so long as the butt was permitted to remain, but has probably now again disappeared. By such accidental circumstances may we often account for many apparent errors in the stations of plants. E.) July—Aug.\*

\* Impressions of the leaves are frequent in the nodules of iron stone found in Coalbrook Dale iron works. It is the only species of an indigenous vegetable which I have ever seen in a fossil state. But it is a native of Virginia also. ST.—All the other impressions of Filices, which I have seen on iron-stone, seem to be those of American plants. The root boiled in water is very slimy, and is used in the North of Europe to stiffen linen instead of starch.

(3) *Leaves, some bedding fructifications*

O. Leaves spear-shaped, wing-cleft, very entire, parallel, Spican'thus. running into each other. See BLECHNUM Spicant.

O. Leaves more than doubly compound; leaflets alternate, cris'pa. roundish, cut. See PTERIS crispa.

**ACROS'TICHUM.** Capsules entirely covering the under surface of the leaf.

(1) *Leaf simply divided.*

A. Leaves naked, strap-shaped, jagged.

septentri-  
ona'le.

*Fl. dan.* 60—*Lob. adv.* 17. 2. *ic. i.* 47. 1—*Ger. em.* 1561. 8—*Bolt. fil.* 8—*Trag.* 537—*Lon.* 1. 224. 5—*Ger.* 343. 4—*Park.* 1045. 8—*J. B. iii.* 755. 2.

*Fructifications*, whilst immature, in short indistinct lines or dots. It is therefore, whilst young, an ASPLENIUM. *Bolt* p. 7. and 12. From two to five inches high. *Leaves* mostly in pairs; strap-spear-shaped, on long leaf-stalks rising from the root. Clefts of rocks and old walls. Tops of mountains in Wales, on Linglebrough, Yorkshire, and above Ambleside, Westmoreland. [Rocks on the South side of Blackford Hill, plentiful. *Mr. Brown*.—Rocks in Edinburgh Park. *Dr. Hope*.]

(2) *Leaves wing-cleft.*

A. Wings opposite, united, and very entire at the base; blunt, hairy underneath. See POLYPODIUM ilven'se.

**PTERIS.** Capsules disposed in a line under the reflected edge of the leaf.

P. Leaves more than doubly compound; leaflets alternate, cris'pa. roundish, cut.

*Bolt.* 7—*E. bot.* 1160—*Fl. dan.* 496—*H. ox.* xiv. 4. 4, and 27—*Phuk.* 3. 2, and 3—*J. B. iii.* 743—*H. ox.* xiv. 5. 25.

*Leaf-stalks* waved, green. *Fructifications* in lines along the under margin of the leaflets, which is rolled back upon them, as in *Pteris aqualina*; after the discharge of the seeds increasing in breadth so as to cover the whole disk, except the mid-rib. *Bolt.*

*Leaf-stalks* from two to seven inches long. *Leaf* from one inch and half to three inches long. *Leaflets* of the barren leaves wedge-shaped and snipt at the edge; those of the fertile leaves much narrower, strap or strap-spear-shaped, and entire. *Capsules* surrounded with an elastic ring; but *Osmunda* and *Ophioglossum* have no such ring.

*Stone Fern. Crisped Fern. Parsley Fern. Stone Brakes.* [Rocks, heaths, old walls in the Northern counties common. Mr. WOODWARD.—In Rutland, Mr. JACKSON.—Shap, very common, also Tenterfell, near Kendal. Mr. GOUGH.—Cader Idris. Fructifications ripe in September. Mr. GRIFFITH.]

Var. 2. Leaves curled.

Mr. Jackson has observed two varieties with curled leaves, the one curled like Parsley, the other like the flowering part of *Osmunda regalis*. (P. July. E.)

aquil'na.

P. Leaves more than doubly compound; leaflets winged; wings spear-shaped, the lowermost wing-cleft; the upper ones smaller.

Ger. 969. 2-Bull. 207-Bolt. 10-Pluk. 182. 1-Blackw. 325-Fuchs. 596, misprinted 569-Dod. 462. 2-Trag. 542-Matth. 1291-Gars. 272-Lob. obs. 473. 2. ic. i. 812. 2-Ger. em. 1128. 2-Park. 1037, misprinted 1039-H. or. xiv. 4. 3-Cam. epit. 992.

The root cut obliquely presents a kind of representation of the Imperial Eagle. LINN. Whence Linnæus has named it the P. aquilina or Eagle Brakes.

*Female Fern. Common Brakes.* Heaths and woods.

P. Aug.\*

**BLECH'NUM.** *Capsules* forming 2 parallel lines near the rib of the leaf.

Spi'cant.

B. Barren leaves wing-cleft; fruitful leaves winged, narrower; segments very entire.

\* A tolerably pure alkaly may be obtained from the ashes. In many parts of England the ashes, mixed with water, are formed into balls; these balls are afterwards heated in the fire, and used to make lye for scouring linen.—It makes a very durable thatch; and is an excellent litter for horses and cows. Where coal is scarce, it is used to heat ovens and to burn limestone; for it yields a very violent heat. In the more inhospitable climates, bread is prepared from the roots. The Fern Moth feeds upon it.



*E. bot.* 1159—*Hedw. Theor.* 5, the fertile and barren leaf, with the parts of fruct. dissect. and magnified—*Curt.* 127—*Fl. dan.* 99—*Trag.* 550—*Lon.* i. 225. 1—*Clus.* ii. 213. 1—*Dod.* 469. 1—*Lob. obs.* 475. 2; *ic.* i. 815. 2—*Ger. em.* 1140. 2—*Park.* 1042. 2—*H. or.* xiv. 2. 23—*Ger.* 978. 2—*Bolt.* 6—*J. B.* iii. 745. 2—*Cam. epit.* 665—*Gis.* 49.

*Flowering-leaves* much narrower than the barren ones. LINN. *Fructifications* covered at first with a thin membrane. *Capsule* of one cell and two valves, connected by an annular elastic cord, containing many minute seeds. HEDWIG. *Barren leaves*, segments widest at the base, strap-spear-shaped, the lateral ribs forked, sometimes, though rarely, terminating in minute scollops. *Fertile leaves*, segments not half so broad, separate, though the confluence may almost always be traced, and towards the end of the leaf gives a waved appearance to the mid-rib. WOODWARD. *Fertile leaves* twelve to eighteen inches high, and near two inches broad, the lower part naked or with short imperfect leaflets. *Barren leaves* from the same root, but only about half as tall, clothed with leaflets nearly to the bottom.

*Rough Spleenwort.* *Osmunda Spicant.* LINN. *Acrostichum Spicant.* Bot. Arr. ed. ii. *Blechnum boreale.* *E. bot.* It is now introduced as a *Blechnum* in compliance with the opinion of Dr. Smith and Mr. Robson, though from the narrowness of the leaflets it is not easy to determine whether the rows of capsules may more properly be considered as contiguous and parallel to the mid-rib, which is the character of that genus, or disposed along the edge of the leaf which would refer it to the *Pteris*. It appears, however, from Hedwig's microscopical dissections, that the anthers are found upon the mid-rib, and that circumstance is, I think, sufficient to determine that the rows of capsules more properly belong to that than to the edge of the leaf, notwithstanding Hedwig himself has decided it to belong to the genus *Acrostichum*. See Pl. XIII. fig. 9, 10, 11.

Groves and moist heaths. St. Faith's Newton woods, near Norwich. Common in Herts, and frequent in the North. Mr. WOODWARD.—At Hainsford, Norfolk. Mr. CROWE.—In lanes about Aston Park, near Birmingham. P. July—Sept.

**ASPLENIUM.** *Capsules* disposed in straight and nearly parallel lines on the under surface of the leaf.

(1) *Leaf simple.*

*Leaves* heart-tongue-shaped, very entire; stalks hairy. scolopendrium.



CRYPTOGAMIA. FILICES. *Asplenium*.

*Curt.-E. bot.* 1150-*Tourn.* 319-*Blackw.* 138-*Bull.* 167-*Bolt.* 11-*Gars.* 346-*Trag.* 549-*Fuchs.* 294-*J. B.* iii. 756-*Clus.* ii. 213. 2-*Dod.* 467. 1-*Cam. epit.* 579-*Walc.-Lob. obs.* 468. 3-*Ger. em.* 1138. 1-*Park.* 1046. 1. f. 2-*H. ox.* xiv. 1. 1-*Lon.* i. 224. 3-*Matth.* 831.

*Leaf-stalks* rising from the root, about two inches long. *Leaf* strap-shaped but rounded and hollowed at the base, from eight to twelve inches long, or more; one inch and half to two inches and half broad, the shortest leaves the broadest. *Fruifications* in lines, slanting upwards from the mid-rib, but not in contact with it.

*Spleenwort*, or *Hart's-tongue* Moist shady rocks, mouths of wells, old walls, and in the fissures of rocks. On the tops of most of the high mountains in Yorkshire. CURTIS.

P. Aug-Sept.

Var. 2. Leaves curled and jagged at the edge.

*J. B.* iii. 757. 3.

[Near a petrifying spring, by the side of a rivulet at the bottom of Garn Dingle, three miles from Denbigh. Mr. GRIFFITH.]

Var. 3. Leaves with many clefts at the end.

*Clus.* ii. 213. 3-*Dod.* 467. 2-*Lob. obs.* 469. 1; *ic.* ii. 805. 2-*Ger. em.* 1138. 2-*Park.* 1047. 1-*J. B.* iii. 757. 2-*H. ox.* xiv. 1. row 1. 2-*Ger.* 967. 2.

*Phyllitis multifida.* R. Syn. 117. In a lane near Swaneling, not many miles from Southampton. *Ger. em.* [Near Bromham, growing in the mouth of a well very much shaded. Mr. NORRIS.]

Var. 4. Leaves with clefts at the edges.

*Tourn.* 451.

*Phyllitis polychides*, &c. R. Syn. 117. In woods. BOBART in R. Syn. 117.

Var. 5. Stalk branched, with three or more leaves.

*H. ox.* xiv. 8.

Mr. Gough sent me a specimen of this variety in which the stalk divides into five branches, but it is entire at the base for about two inches and a half, and furnished with its usual leafy border.

This was gathered on Warton Cragg, near Lancaster.

All the above varieties are much smaller than the plant in its more common state.

Var. 6. Leaves much plaited and crenated at each edge, spear-shaped, (sometimes heart-tongue-shaped,) nearly as large as the common variety.

Found in woods at Stoutshill, Gloucestershire, by the Rev. Mr. BAKER,

(2) *Leaf wing-cleft.*

A. Leaves wing-cleft; lobes alternate, confluent, blunt. *Ceterach*.

*Bull.* 333—*E. bot.* 1244—*Walc.*—*Gars.* 212—*Barr.* 1051. 1052. 1043. 1044—*Tourn.* 318—*Trag.* 551—*Dod.* 468—*Lob. obs.* 470. 1; *ic.* i. 807. 1—*Ger. em.* 1140. 1—*Park.* 1046. *f.* 1—*Ger.* 978. 1—*Matth. a. C. B.* 646. 1—*H. ox.* xiv. 2. row 3. *f.* 4—*Blackw.* 216.—*J. B.* iii. 749—*Bolt.* 12—*Matth.* 899—*Cam. epit.* 640.

*Leaves*, so covered underneath with scales as to conceal the fructifications. LINN. *Leaves* many from a root, three to six inches long, the hollows between the lobes of the same size and shape as the lobes, edges somewhat bent back when the fructifications ripen. Mr. WOODWARD. Segments of the leaves very entire, semi-oval, green above, thickly covered with brown scales underneath. Mr. GOUGH.

*Common Scaly Spleenwort. Scolopendrium Ceterach.* *E. bot.* and *Fl. Brit.* Old walls and clefts of moist rocks. About Bristol plentifully. [At Bury, at Asheridge, Hertfordshire. Northern counties frequent. Mr. WOODWARD. Heydon, Norfolk. Mr. BRYANT. On old walls cemented with mortar mixed with clay; and in a similar soil in limestone fissures on the highest part of Kendal Fell. Mr. GOUGH.]

P. May—Oct.

(3) *Leaves winged.*

A. Leaflets nearly circular, scalloped.

*Trichomanes*.

*Dicks. h. s.*—*E. bot.* 576—*Woodv.* 204—*Kniph.* 6—*Walc.*—*Bolt.* 13, and 2. 2—*Bull.* 185—*Tourn.* 315. A. D. E.—*Fl. dan.* 119—*Blackw.* 370—*Gars.* 128. B.—*Trag.* 530. 1—*Lonc.* i. 212. 1—*Cam. epit.* 925—*Park.* 1051—*Matth.* 1202—*Dod.* 471. 1—*Lob. obs.* 471. 2; *ic.* i. 809. 2—*Ger. em.* 1046—*H. ox.* xiv. 3. row 1. 10—*Fuchs.* 796—*Ger.* 985—*Hedwig.* *Th.* 7. 37, a leaflet magnified.

CRYPTOGAMIA. FILICES. *Asplenium*.

*Plant* from three to seven inches high, consisting of a leaf, several of which rise singly from a black fibrous root; from one quarter to three quarters of an inch broad. *Leaflets* either circular or oblong; sometimes rather cut into lobes; capsules when ripe covering the whole under surface.

*Spleenwort. Common Maidenhair.* Old walls, rocks, and shady stony places. P. May—Oct.

alternifo-  
lium.

A. Leaflets wedge-shaped, alternate, cut towards the end.

*Jacq. misc. 5. 2-Breyn. cent. 97.*

From three to five inches high. First found in Britain by Mr. DICKSON, on rocks in the South of Scotland. Linn. Tr. ii. p. 290. P.

viride.

A. Leaves spear-shaped; leaflets circular, but with 3 or 4 angles.

*Dicks. h. s.—Bolt. 14.*

*Leaf-stalk* of a pale green, sometimes brownish towards the root, and in some specimens brown and glossy as in *A. trichomanes*. *Wings* rhomboidal, fixed to the leaf-stalk by one of the corners, the upper and lower sides of the base very entire, the other two scalloped. BOLT. *Wings* more lopped at the base than in *A. trichomanes*. *Leaf-stalk* green, which seems to be the only certain character by which it is distinguishable from *A. trichomanes*. Mr. WOOD. In the *A. trichomanes* the wings or leaflets are less regular in their edges, and less distinctly scalloped; but in the *A. viride* the inner and under edges are always entire, the upper and outer ones always scalloped. The general shape of the leaf in both species is the same, and rather strap than spear-shaped.

*Green-ribbed Spleenwort. A. trichomanes* γ. LINN. Moist rocks on mountains. [On an old wall at Black Bank near Leeds. Mr. WOOD. On Ingleborough. BOLT. near the summit; and in Borrowdale. Mr. WOODWARD. Crib y Ddeseil and Clogwyn du yr Arddu. Mr. GRIFFITH. Frequent in the Highlands of Scotland. Mr. BROWN.] P. June—Sept.

Var. 2. Wings lobed and cut.

*H. ox. xiv. 13. 3-Pluk. 73. 6-Tourn. 315. C. F.—Ger. 975.*

Scotland. BOBART, in *H. ox.*—Jersey. PLUK.

Var. 3. Leaf branched. BOLT.

*Bolt.* 2. 3-*H. ox.* xiv. 3. 11-*Ger.* 985. 2-*J. B.* iii. 755. 1.

*A. Trichomanes ramosum.* LINN.—*A. Trichomanes* β. (HUDS.)  
On all the high rocks of Caernarvounshire. On a stone wall in a garden at Maidstone, Kent, and on limestone rocks Craven, Yorkshire. On the rocks below Ogden Kirk on the opposite side of the Clough. *BOLT.*

*A.* Leaflets egg-shaped, serrated; the upper edges expand-mar'num.  
Wed at the base, the lower hollowed out.

*E. bot.* 392-*Pet. gaz.* 91. 1-*Bolt.* 15-*H. ox.* xiv. 3. 25-  
*Pluk.* 253. 5-*Walc.-Lob. obs.* 474. 3, *ic.* i. 814-*Ger.*  
*em.* 1143. 4-*Park.* 1045. 7.

*Stalks* reddish brown. *Leaflets* in some specimens spear-shaped, acutely scalloped, the scallops equal in number to the lines of fructification, lobed at the base on the upper side. *Mr. Woodward.* *Plant* five inches high. *Stalk* crooked at the base.

On rocks generally on the sea shore, about Priestholm Island, near Beaumaris, at Llandwyn in Anglesea, about the Castle of Hastings, Sussex, and in Devonshire, Cornwall, and Cumberland. In a stone quarry close to the road from Warrington to Winwick, Lancashire. *BOLT.* [On the coast of Angus between Montrose and Arbroath. *Mr. Brown.*] (At Bootle, and in fissures of rocks at Knott's Hole, near Liverpool. *Dr. Bos-tock. E.*) *P. June—Sept.*

*Var.* 2. Leaflets deeply cut. *BOLT.*

*Sibbald Scot. ill. t.* 3. *f.* 1. 2-*Bolt.* 2. 4.

Plants corresponding to Sibbald's figures we found in the Coves at Weems in Scotland. *LIGHTFOOT.* *Adiantum trapezi-forme.* HUDSON.

(4) *Leaves* doubly compound: divisions alternate.

*A.* Leaflets wedge-shaped, finely scalloped.

ru'ta mu-  
ra'ria.

*Kniph.* 6-*E. bot.* 150-*Sheldr.* 68-*Bull.* 195-*Walc.-Cam.*  
*epit.* 785-*Fl. dan.* 190-*Tourn.* 317. 1-*Bolt.* 16-*Blackw.*  
219-*Gars.* 128. a-*Fuchs.* 730-*J. B.* iii. 753-*Lon.* i. 221.  
1, and 2-*Trag.* 530. 2-*Dod.* 470-*Lob. obs.* 472. 1;  
*ic.* i. 811. 1-*Ger. em.* 1144. 3-*Park.* 1050. 4-*H. ox.*  
xiv. 5. 22-*Ger.* 983-*Matth.* 1041.



*Stem* bare for near half its length. *Fructifications* in two or three rows, on each side the rib of the leaf. **BOLT.** The foliage at first sight has something of a Trefoil appearance. **Dr. Smith** very properly observes, that the Ferns can only be determined in their early state before the bursting of the membrane which covers the capsules, for in an advanced state the back of the leaf is covered with a confused mass of capsules, with hardly a vestige of their former disposition. He thinks this species may be best distinguished by the membrane always bursting towards an adjoining vein or nerve, never towards the edge of the leaf, unless when a vein is found on that side. See *E. bot.* p. 150.

*White Maidenhair. Wall Rue. Tentwort.* Old walls and moist crevices of rocks. [Southwold Church, Suffolk, Long Stratton Church, Norfolk. **Mr. STONE, Mr. WOODWARD.** Walls at Shirehampton, near Bristol; and at Bewdley.]

P. June—Oct.

*Adiantum ni'grum.* A. Leaves almost triply winged; wings alternate; leaflets spear-shaped, cut-serrated.

*Kniph.* 7—*Fl. dan.* 250—*Gars.* 126—*Blackw.* 220—*Bolt.* 17. 1, and 3—*Dod.* 466—*Ger em.* 1137—*Ger.* 975. 1—*H. ox.* xiv. 4. 16—*Lob. ic. i.* 810. 2—*Park.* 1049. 2.

*Seeds* saffron-coloured. **LINN.** *Lobes*, the extreme serratures so acute as almost to appear fringed. **Mr. WOODWARD.** *Stalks* black or deep red brown; glossy. *Fructifications* three to seven on each segment.

*Black Maidenhair. Oak Fern.* Shady places and old walls. [Pendennis Castle.]

P. April—Oct.

Var. 2. *Wings* long, divided into very fine and longish segments. **SHERRARD** in *R. Syn. Pluk.* 282. 3. *Wings* with hair-like segments. **PLUK.** *Fructifications* none discovered. Possibly a variety of *A. Adiantum nigrum*, owing to a very shady situation, but if a variety it is a very extraordinary and beautiful one. **DILL.**

*Filix non ramosa, &c.* **PLUK.** alm. p. 150. par. the last but one, as corrected according to mant. p. 78. par. 4. Mountains of Mourn in the county of Down, Ireland, *R. Syn.*

*lanceola'tum.* A. Leaves doubly winged, spear-shaped; wings alternate; leaflets inversely egg-shaped, sharply cut and scolloped. **HUDS.**

*E. bot.* 240—*Bolt.* 17. 2, (but less sharply cut than in the preceding figure.)

Stalk black below, green upwards. Leaf bright green. Capsule in an advanced state, forming roundish, as well as oblong patches. *E. bot.*

*Spear-shaped Spleenwort.* On old walls and rocks about St. Ives and other places in Cornwall. HUDSON. On a wall in the village of Wharf, Yorkshire. BOLTON. On the great rock at Tunbridge Wells. Mr. FORSTER. P. May—Sept.

**POLYPO'DIUM.** Capsules disposed in distinct circular dots on the under surface of the leaf.

**OBS.** The investigation of the species of this extensive genus has always been attended with difficulties and uncertainties; partly owing to the prevalence of a general resemblance in habit, partly to the different appearances observable in them at different ages, and partly to deficiencies in the specific characters. Nor have authors always been scrupulously accurate in the application of the terms used in describing the leaves.

The plants should not be gathered for examination until of sufficient age to attain a full state of fructification. The terms employed in the subdivisions of the species, and in characterizing the individuals, should be precisely understood. The attention should be more particularly directed to the lower parts of the leaves, wings, &c. for there it is that the characters are most constant, and most observable, the extreme parts generally running together so as to baffle every attempt at description.

The following tabular view of the different British species is offered as a mean of facilitating their investigation; the student, therefore, is advised first to compare the plant in question with these characters, and then to look forward for the characters and descriptions given more at large.

(1) *Leaves wing-cleft.*

*P. vulgare.* Lobes oblong, somewhat serrated, blunt.

(2) *Leaves winged.*

*P. Lonchitis.* Wings crescent-shaped; finely and sharply serrated; stems with chaff-like scales.

## CRYPTOGAMIA. FILICES. Polypodium.

- P. Ilven'se*. Wings opposite, triangular, blunt, hairy underneath, very entire at the base.
- P. arvo'nicum*. Wings spear-shaped, wing-cleft, hairy underneath; stems hairy.
- P. Phegop'teris*. Wings strap-spear-shaped, wing-cleft, united at the base; hairy underneath.
- P. Oreop'teris*. Wings strap-spear-shaped, wing-cleft; lobes bluntish; clusters of capsules at the edges.

(3) *Leaves winged; wings deeply wing-cleft.*

- P. F.mas*. Wings strap-spear-shaped; lobes blunt, finely serrated; stem chaffy.
- P. Thelyp'teris*. Wings spear-shaped, acute; lobes very entire.
- P. denta'tum*. Wings egg-spear-shaped, opposite; lobes egg-shaped, blunt, sparingly cut at the sides, finely toothed at the end.
- P. fenta'num*. Wings egg-spear-shaped, alternate; lobes deeply scalloped.

(4) *Leaves doubly-winged.*

- P. aculea'tum*. Primary wings crescent-shaped, acute; leaflets serrated with prickles; stem chaffy.
- P. spinulo'sum*. Primary wings spear-shaped; leaflets strap-egg-shaped, wing-cleft, and serrated with fine prickles.
- P. fax'mina*. Primary wings strap-spear-shaped; leaflets slender, acute, wing-cleft, or serrated; stems smooth upwards.
- P. crista'tum*. The lowermost secondary wings much longer than those nearest opposed to them.
- P. fra'gile*. Primary wings spear-shaped; leaflets wedge, egg, or strap-shaped; segments bluntly or sharply lobed; stem very slender.

- P. trifidum*. Primary wings spear-shaped, blunt, leaflets of the lower wings mostly 3-cleft; stem bordered.
- P. rhæticum*. Primary wings spear-shaped; leaflets egg-spear-shaped, sharply serrated; lower pairs unequal.

(5) *Leaf triply-winged.*

- P. Dryop'teris*. Leaves 3 on a stem; doubly winged.

(1) *Leaves wing-cleft; lobes united at the base.*

- P. Lobes* oblong, somewhat serrated, blunt; root scaly. *vulga're.*

*Ludw.* 18—*Curt.-E. bot.* 1149—*Fl. dan.* 1060—*Kniph.* 6—*Bolt.* 18—*Bull.* 191—*Blackw.* 215—*Tourn.* 316—*Walc.-Woodv.* 271—*Gars.* 466—*Fuchs.* 588—*Trag.* 540—*Dod.* 464. 2—*Ger. em.* 1132. 2—*Tourn.* 316—*Ger.* 972—*Matth.* 1293—*Dod.* 464. 1—*Lob. obs.* 475. 1. *ic. i.* 814. 2—*Ger. em.* 1132. 1—*Park.* 1039. 1—*H. ox. xiv.* 2. row 1. 1—*Ger.* 974. 1—*Cam. epit.* 993—*Lon. i.* 224. 1.

*Lobes* slightly serrated at the edge. *Fructifications* yellowish brown, in rows, parallel to the rib of the lobes.

*Common Polypody.* On old walls, shady places, and at the roots of trees, very common.

*P. June—Oct.\**

*Var. 2. Lobes* doubly serrated.

*Barr.* 38.

*Walls of Windsor Castle. R. Syn. [Worcestershire. St.]*

*Var. 3. Lobes* sometimes cloven at the end, sometimes enlarged by an appendage growing out of one side.

*Bolt. 2. 5. b. a portion of a leaf.*

In a wood near Bingley, Yorkshire. *Mr. ALEXANDER.*  
Braid hill, near Edinburgh. *Mr. BROWN.*

\* The root is sweetish: by long boiling it becomes bitter. When fresh it is gentle purgative. An infusion of 6 drachms of it in half a pint of boiling water may be taken at twice.



Var. 4. *Cambricum*. Lobes wing-cleft.

*H. ox.* xiv. 2. 8—*Pluk.* 30. 1—*Bolt.* 2. 5. (a) a portion of the leaf.

In this state it never produces fructifications. The same is observable of the waved variety of *Asplenium Scolopendrium*.  
LIGHTFOOT.

On a rock in a wood near Dennys Powys Castle, not far from Cardiff, Glamorganshire. *R. Syn.* [Near Kidderminster.]  
P. June—Oct.

Var. 5. *acutum*. Lobes very long, distantly serrated; tapering to an acute point.

Specimen sent by J. W. GRIFFITH, Esq. [On rocks in North Wales. Crevices of rocks on the south side of the King's Park, Edinburgh. Mr. BROWN.]

(2) *Leaves winged.*

*Lonchitis*. P. Wings crescent-shaped, the convex side downwards; fringe-serrated; stems with chaff-like scales.

*E. bot.* 797—*Fl. dan.* 497—*Tourn.* 314—*Bolt.* 19—*Matth.* 922—*Ger.* 979—*Ger. em.* 1140. 3—*Pluk.* 89. 6—*H. ox.* xiv. 2. row 3. 1—*Cam. epit.* 664—*Park.* 1042. 1—*J. B.* iii. 744—*Lon.* ii. 34. 1.

*Leaves* in circles round the crown of the root, which is rough with the remains of decayed stalks, keeled, from the wings being bent upwards on each side the leaf-stalks. *Leaflets* so closely placed as to be tiled, the lower edge covering the upper edge of the next beneath, serratures frequently but irregularly terminating in short spine-like teeth, furrowed underneath with veins, the margin of the upper half of the base of each leaflet parallel to the general stalk. *Stalk* furrowed above. *Fructifications* in dots, disposed in two parallel lines on each leaflet. Mr. WOODWARD. *Plant* from four to fourteen inches long, and from one to two inches broad; generally curved. *Leaflets*, the larger serratures ending in semi-transparent thorns.

*Royal Polypody. Great Spleenwort. Spleenwort Polypody.* Clefts of rocks. On the highest mountains of Caernarvonshire; on Glydar near Llanberris. [On all the mountains of Breadalbane and Glen-lochai, sometimes two feet high or more, but quite distinct from the *P. aculeatum*. Mr. BROWN. (In the

clefts of rocks near the summit of Ben Lomond. Rev. T. GIBBON. E.) P. May—Sept.

P. Leaflets opposite, united, blunt, hairy underneath; very entire at the base. Ilven'se.

Dicks. h. s.—Bolt. 42—H. ox. xiv. 3. 23—Pluk. 179. 4.

Scarcely more than a finger's length. Stem greenish, not blackish purple. LINN. Leaflets six or seven on each side the stem; the lower ones opposite, the upper alternate; thick and opaque; generally cloven into five or seven segments, rounded at the ends.

*Acrostichum ilvense*. LINN. *Acr. alpinum*. BOLT. Ben Lawers. Mr. DICKSON. Near the top of Clogwyn y Garnedd. P. July—Sept.

P. Leaflets spear-shaped, wing-cleft; hairy underneath; stem hairy. arvonicum.

Pluk. 89. 5—Fl. dan. 391. (Mr. Bolton believes his tab. 9. to be the same plant.)

From three to five inches high. Leaflets seven to fifteen pairs, cloven on each side into five or six segments; spear-shaped, hairy underneath. BOLTON.

*Acrost. ilvense*. HUDS. and BOLT. It is a very rare plant, even on Snowdon. Mr. LLWYD, in Ray Syn. p. 119. On a moist black rock almost at the top of Clogwyn y Garnedd, facing the North-west, directly above the lower lake. Dr. RICHARDSON, *ib.* P. July—Sept.

This seems sufficiently distinct from the *P. ilvense* found on the Scottish Alps by Mr. Dickson. Mr. Griffith thinks that Bolt. t. 9. is only a very small and stiff plant of *P. fragile* gathered in a high and exposed situation; and that it is not the plant found by Mr. Llwyd in Ray's Syn.—(Swartz is also decidedly of opinion that this plant is different from the *P. ilvense*. E.)

P. Lowermost leaflets bent back, each pair united at the base by a 4-cornered little appendage. Phegopteris.

*Bolt.* 20\*—*H. or.* xiv. 4. 17. *f.* 3, the quadrangular appendage not expressed.

*Leaflets* spear-shaped, wing-cleft. LINN. *Plant* sometimes nineteen, and *stalk* twelve inches high. *Leaflets*, the lowermost pair not confluent as all the rest, and placed an inch and a half from the pair above it; in a vigorous plant bent almost back to back, in consequence of which, when dried and gummed on paper, they form an acute angle with the stalk, and might lead those who had not seen the plant growing, to suppose they grew in the same plane with the rest. *Lobes* semi-elliptical. MR. WOODWARD. *Whole plant* hairy.

*Wood Polypody.* Clefts of rocks in moist and shady places and woods, in Yorkshire, Westmoreland, Devonshire, and the Lowlands of Scotland. [Barrowfield wood near Kendal, by the fall of Lodore near Derwent Water, and in several woods in the North. MR. WOODWARD.] (On the banks of Loch Lomond. Rev. T. GISBORNE. E.) P. June—Oct.

*Oreop'teris.* P. *Leaflets* strap spear-shaped; segments very entire, bluntish; clusters of capsules at the edges.

*E. bot.* 1019—*Fl. dan.* 1121—*Bolt.* 22.

(Three times the size of *P. Thelypteris*. The peculiar characteristic of this species is the yellowish resinous glands sprinkled over the back of the leaves. These sometimes exhale a sweet scent, remarked by Mr. Teesdale. *E. bot.* E.) *Stem* smooth, with two furrows; ten to fifteen inches high or more. *Wings*, the upper and lower ones alternate; segments strap-spear-shaped, blunt, either entire, or finely serrated. The two or three lower pair of wings gradually shorter, and the lowest pair often pointing downwards. Mr. Dickson observes, that the fructifications are always at the edge of the lobes, both in the young and in the more advanced state, and that they never become confluent.

*Heath Polypody.* *Polypodium montanum.* VOGLER. *P. Thelypteris.* HUDS. LIGHTF. BOLT. Woods at Castle Howard, Mr. TEESDALE, who observes that the leaves have a very agreeable scent. [Moist woods near Darlington, never on dry hills in that neighbourhood. Mr. ROBSON. In a wood at Old Foot's Well, near Bromsgrove, and in a lane near the Bell Inn at Erdington. Miss READ. More frequent in mountainous situa-

\* The lowermost pair of leaflets touch the pair above, and their bending back to back not expressed. MR. WOODWARD.

tions than any other species. Mr. GRIFFITH. Common in Scotland, but always in somewhat marshy ground, never on dry hills, as Mr. Dickson alledges. Mr. BROWN.]

P. July—Oct.

(3) *Leaves winged; wings deeply wing-cleft.*

P. Leaves almost doubly winged; leaflets strap-spear-shaped; lobes blunt, finely serrated; stem and mid-ribs chaffy. *Filix-mas.*

*Dicks. h. s.—Kniph. 6—Woodv. 49—Bull. 183—Tourn. 310 to 312—Bolt. 24—Ger. 969. 1—Fuchs. 595—J. B. iii. 738—Dod. 462. 1—Blackw. 323—Gars. 271—H. ox. xiv. 3. 6—Matth. 1290—Cam. epit. 991—Park. 1036—Lob. obs. 473. 1. repr. in. ic. 1. 812. 1, and Ger. em. 1128.*

From one foot and a half to four feet high. Lobes of the wings strap-shaped, the ends rounded. *Fructifications* from three to eight on each lobe, placed in two rows near to its base and distant from its edges; none at the end.

*Male Polypody. Male Fern.* Woods, heaths, stony places.  
P. June—Oct.\*

P. Leaflets wing-cleft; lobes very entire, the under surface entirely covered by clusters of capsules. *Thelypteris.*

*Hedw. theor. 6—E. bot. 1018—Schmid. 11. 1. 2—Bolt. 43—Fl. dan. 760—Mapp. 7. a, at p. 106—J. B. iii. 739. 1—Ger. 981. 3—Ger. em. 1135. 1—Park. 1041. 1.*

Its habit that of *P. Filix-mas*. Stem smooth. Old leaflets covered with capsules. *Barren leaves* broader and blunter.

\* The Siberians boil it in ale, and are fond of the flavour which it imparts. The powder of the root is Madame Nouffer's celebrated remedy to expel the tape-worm. She gives the patient a liquid lubricating supper, and, if costive, a common clyster. Early next morning two or three drachms of the root in powder are exhibited mixed with water. If thrown up it must be repeated. The patient must fast two hours, and then take a drastic purge. See Dr. Simmon's Account of the Taenia. I have frequently used it, and seldom without the desired effect.—(In the reign of Henry the Sixth so great a famine prevailed that Fern roots were used for the purpose of making bread. It would be difficult now to ascertain the exact species, but probably the largest and most common kind. E.)



LYNN. Root small, creeping. DICKSON. Wings deeply divided; but the divisions do not reach to the mid-rib. Lobes when in seed much contracted, and narrower than before the capsules are fully formed, but this circumstance is very general through the whole tribe. (Dr. Smith observes that the slender creeping root, and the crossing, but separate leaflets, distinguish this species from every other. E.)

Marsh Polypody. Acrost. Thelypteris. BOLTON. In bogs. [St. Faith's Newton Bogs near Norwich. Mr. PITCHFORD. Near Bungay, Suffolk. Mr. WOODWARD. In a moist dell at the foot of Snowdon near Llanberris. Mr. AIKIN.] (At Lound, near Yarmouth. Mr. TURNER. E.) P. July—Oct.

The *Polypodium fragrans* of HUDS. adopted by LINNÆUS is supposed to be only a dwarf plant of this species, but it merits further attention from such botanists as live near Keswick, where HUDSON mentions finding it in moist clefts of rocks.

denta'tum.

P. Leaflets, opposite, wing-cleft; lobes sparingly cut at the sides, finely toothed at the ends; stem very slender.

Dicks. h. s.—Dicks. fasc. iii. 7. 1.

Nearly resembles the *P. fragile* in size and in habit. Root small, fibrous, bundled, a little woolly. Stems several, slender, pale brown, shining, somewhat scaly at the base. Leaf spear-shaped, doubly winged. Wings distant, spear-shaped, mostly alternate. Leaflets egg-shaped, blunt, cut, unequally toothed; teeth distant, blunt, pale brown. Clusters of capsules near the incisions, towards the edge. DICKSON.

Such is the account given by Mr. Dickson of this new species of *Polypodium*, which he first discovered in clefts of rocks in the Highlands of Scotland; but though this description and his specific character mention it being doubly winged, neither his own figure, nor the specimens sent out in his Fasciculi of dried plants, authorize us to say that they are so. They are only simply winged, and the wings divided into lobes, nor have they any proper mid-rib. The *Polyp. dentatum*, of Forsk. in GMELIN's *Syst. Nat.* is a different plant.

fonta'num.

P. Leaflets alternate, triangular, blunt, deeply wing-cleft; lobes sharply toothed at the end; stem very slender.

Lob. adv. 361. 2, and ic. ii. 810. 1—Bolt. 21—Barr. 432. 1—Pluk. 89. 2, and 3—Ger. 980. 2.

Its habit that of *P. fragile*, but the leaflets closer together and not so deeply lobed. *Fructifications* in large dots, proceeding not from a roundish scale, but from an oblong white slender valve or chink. LINN. *Plant* three or four inches high. *Stamens* pale green, thread-like. *Leaflets* alternate. BOLT.

Old walls and rocks. Rocky places near Wybourne, Westmoreland. Also in Buckinghamshire. BOLT. P. June—Sept.

(4) *Leaves doubly winged.*

P. Primary wings crescent-shaped; leaflets rhomboidal, aculeatum. with prickle-like teeth; stem chaffy.

*Mill. ill.*—Bolt. 26. 1 and 3—*H. ox.* xiv. 3. 15. f. 1—*Pluk.* 179. 6, a young plant only winged.—*Pluk.* 180. 1, fully grown,—*Pluk.* 180. 3, in its middle state of growth.

Sometimes half a yard high. *Leaflets* irregularly rhomboidal, with a projecting angle on the upper edge near to the mid-rib. The leaflets immediately adjoining to the primary mid-rib are very unequal in size, the uppermost being the largest and having its lower edge parallel to the primary mid-rib. In a young state the leaf is only simply winged, as represented in Bolton's pl. 26, fig. 2.

*Prickly Polypody.* Woods and shady places. [In a ditch in a meadow at the Valley near Bromsgrove. Miss READ. In a ditch near Elmdon House, Warwickshire. Jan.] P. June—Oct.

Var. 2. Leaves sprinkled with a moss-like down. PLUK.

P. Primary wings spear-shaped; leaflets strap-egg-shaped, spinulosum. wing-cleft, and serrated with sharp-pointed teeth.

*Fl. dan.* 707.

This has been taken for the *Polypod. cristatum*, but it is very different from that; of a more delicate and transparent texture, the leaf-stalk but little, if at all scaly, the opposite leaflets on the wings not unequal in size, and the mid-rib of the leaflets serpentine. It agrees with it in the disposition of the fructifications, and in the serratures ending in short awns.

[Bogs on Birmingham Heath. Holloways in Devonshire.] P. July—Sept.

P. Leaflets strap-spear-shaped, wing-cleft, acute; stems Filix-fœmina. smooth upwards.

*Pluk.* 180. 4—*H. ox.* xiv. 3. 8—*Bolt.* 25—*Munt.* 288. 84—*J. E.* iii. 738.

*Fructifications* egg-shaped, somewhat fringed, solitary. LINN. *Leaflets* deeply cut with one or two divisions: the teeth often ending in a short awn. WOODWARD. The most elegant of all our Ferns. One cluster of capsules on each lobe of the leaflet. BOLT. So that in a ripening state the whole of the leaflet seems covered by them, whilst in the *P. Filix-mus* the upper end is always bare. The lower pair of leaflets on each wing, this is, the pair next to the principal or primary leaf-stalk, stand close to it, and parallel with it, pointing upwards and downwards. The breadth of the leaflets varies considerably in different plants, but when they are narrow and the wings distant, the whole has a remarkably light and elegant appearance.

*Female Polypody.* Moist and shady marshy places. Moist rocky woods; about rivulets, and on heaths. [Lewesdon Hill. Mr. BAKER.] (Knot's-hole near Liverpool. Dr. BOSTOCK. E.)

P. June—Sept.

*cristatum.* P. Leaflets deeply wing-cleft; segments oblong, blunt, serrated, fringed; clusters of capsules in a double row.

*Mull. frid.* 2. 4—*Pluk.* 181. 2—*Bolt.* 23.

*Fructifications* on the upper, but not on the lower leaflets. LINN. But with us on all the leaflets when the plant is come to maturity. Mr. DICKENSON. In moist rich soil three or four feet high, and trebly winged; on dry rocks on banks about a foot high, the first pair of wings the largest and the only pair that are triply divided. BOLT. Serratures ending in short awns. WOODWARD. Stem scaly all the way up. Lower leaves of the lower wings larger and longer than those opposite to them.

*Crested Polypody.* Moist woods and shady places in a gravelly soil. In chinks of moist rocks, and old walls; and in marshy places at the root of decaying oaks. [On Ben Bourde, a mountain seven miles N. W. from Invercauld, Aberdeenshire. Mr. BROWN.]

P. June—Sept.

*fragile.*

P. Primary wings spear-shaped; leaflets with a few irregular teeth towards the end; stem very slender and brittle.



Var. 1. Primary wings long spear-shaped, acute, distant; leaflets distant, pointed.

*Bolt.* 46—*Fl. dan.* 401—*Pluk.* 180. 5.

From four to seven inches high. *Stem* red, bare for about two inches at the base; smooth, slender, brittle. *Leaflets* more than twice as long as they are broad. In habit approaching nearly to the *P. rhaticum*, but it is not distinctly doubly winged like that plant, nor are the lobes of the leaflets regularly serrated at the edges, as in that.

*Brittle Polypody.* Dry stony places. [Mountains in Wales. Mr. GRIFFITH. Walls about Buxton. Mr. DICKENSON. Near Hyde, Gloucestershire. Mr. BAKER. Road from Bourn Heath to Worms Ash near Bromsgrove. Miss READ.] P. June—Sept.

Var. 2. Primary wings spear-shaped, acute; leaflets crowded.

*Bolt.* 27—*Barr.* 432—*J. B.* iii. 741. 2—*Seguier.* 1. 1.

From two to six inches high. *Stem* red, bare for half to one and a half inch from the base; smooth, brittle, but less slender than in the preceding. *Leaflets* not equal in length to twice the breadth.

Mountains in North Wales. Yorkshire and the other Northern counties. [Near Snowdon on the rocks of Clogwyn dû yr Arddû. Mr. GRIFFITH.]

Var. 3. Primary wings spear-shaped, blunt.

About three or four inches high. *Stem* red, bare for half to one inch from the base; smooth, brittle, slender.

This has a general resemblance to the *P. dentatum*, but differs from that in the colour of the stem, in being doubly winged, and in the want of fine teeth at the ends of the lobes.

Mr. GRIFFITH of Garn, favoured me with specimens of all these three varieties gathered from the same root, and I have seen a single specimen uniting the characters of the two former.

P. Primary wings spear-shaped, blunt; leaflets of the lower pair of wings mostly 3-cleft; stem bordered. *trifidum.*

*E. bot.* 163.

Three or four inches high. *Stem* brown green, slender, bare for one inch or more at the base; edged with a narrow border on each side. *Wings* nearly triangular; leaflets 3-cleft, the middle segments sometimes notched.

I am indebted to the liberality of J. WYNNE GRIFFITH, Esq. of Garn, near Denbigh, for a beautiful specimen of this plant. It



is sufficiently distinct from the *Polypodium fragile*, though in habit much resembling our third variety of that species. Both this and the *P. fragile* have their capsules in a globular bag, which seems attached to the foliage in one point only, and readily separates from it. Not having yet adopted the new genus *Cyathea*, we lament that we could not use the trivial name given to this plant by Dr. Smith in E. bot. because there is already a *Polypod. incisum* in Gmel. syst. veg.

*Cyathea incisa*. E. bot. where it is mentioned as having been found by Mr. T. F. FORSTER, jun. on a wall near Walthamstow, and that he thought it distinct from the *P. fragile*. Mr. GRIFFITH found it on Cwm Idwel.

rhæticum. P. Primary wings spear-shaped, distant; leaflets deeply lobed; lobes pretty regularly toothed at the edges.

*Dicks. h. s.*—Bolt. 45 and 2. 6—H. or. xiv. 4. 8.

Seven or eight inches high. Stem red, smooth, slender, convex on one side, bare for two or three inches from the base. Wings distant, spear-shaped, acute; leaflets strap-spear-shaped, the edges toothed. Mr. Bolton has very well observed, that the wings are distinct all the way up, not becoming confluent at the top, and that the leaflets on the upper side the secondary mid-rib are larger than those on the lower, by which it may be distinguished from the *P. fragile*. The regular serratures on the sides of the lobes also afford a good distinction, the lobes in the *P. fragile* being only serrated towards the end, and that very irregularly.

Shaded rocks, Scotland. Mr. DICKSON. Mountains in Westmoreland. Top of Glyder mountains, on the side which hangs over Llyn Ogwen Lake; and near Ffynnon felon. [On walls near Ambleside, Westmoreland. Mr. WOODWARD. On the Leek road a quarter of a mile from Buxton.]

P. June—Sept.

(5) *Plant triply winged.*

Dryop'teris. P. Stem supporting 3-winged or doubly winged leaves.

E. bot. 616—Kniph. 12—Bolt. 28—Trag. 538—J. B. iii. 741. 1—Lon. i. 224. 2—Ger. 974. 2—Clus. ii. 212. 1—Ger. em. 1135. 3—Park. 1044, middlemost figure—H. or. xiv. 4. 19.

Fructifications near the rib of the secondary wings. BOLT. Plant from five to eight inches high. The three leaves placed

near the end of the stem, one terminating and one on each side. The Rev. Mr. BAKER observes that, "at the point where the lower pair of pinnæ branch from the stem the plant forms an obtuse angle and leans backward. This appears to be occasioned by four strong glands on the upper side of the stem and two on the lower. These glands attend the angles formed by the other wings, but decrease as they advance."

Dry stony places in Yorkshire, Lancashire, Westmoreland, and Scotland. [Amongst the rocks at the fall of Lodore on the side of Derwent-water, Cumberland. Barrowfield Wood near Kendal, and other rocky woods in the North. Mr. WOODWARD. In woods North-east of the road up Frocester-hill, Gloucestershire. Mr. BAKER. Needwood Forest. Mr. BAGOT. In abundance near the seat of the Rev. THOS. GIBBORNE, at Yoxall, Staffordshire.] P. June—Sept.

Var. 2. Leaves larger. The largest lobes lobed or divided half way down to the mid-rib. Stalk taller, firmer, white, opaque. BOLT.

Bolt. 1. 1.

In White-scars near Ingleton, Yorkshire, and in the Peak of Derbyshire. BOLT.

(Mr. Brunton has found a large variety of this plant near the first water-fall in Hackfall, Yorkshire, so extremely different in appearance from the proper state, that a young botanist would be at a loss to know to what species to refer it. Bot. Guide. 722. E.)

**ADIAN'TUM.** Capsules forming oval spots under the ends of the leaves, which are folded back.

A. Leaves doubly compound; wings alternate; leaflets wedge-shaped; lobed, on leaf-stalks. Capillus-Veneris.

Dicks h. s.—Jacq. misc. ii. 7—Bull. 247—Bolt. 29—Tourn: 317.  
2—Ger. 982. 2—Tourn. 317. 2—Cam. epit. 924—Park. 1049.  
1—Matth. 1201—J. B. iii. 752—Lob. adv. 361. 1, ic. i. 809.  
2—Gars. 125. A.—Ger. 982. 1—Fuchs. 82—Trag. 531—Dod.  
469. 2—Ger. em. 1143. 1.

About five or six inches high. Leaflets fan-shaped, with four or five nicks at the end, BOLT. of a very delicate semi-transparent green, which it retains in a dry state.

*True Maidenhair.* Rocks and moist walls. Barry Island and Port Kirig, Glamorganshire.—Isle of Arran, near Galloway. P. May—Sept.\*

**TRICHO'MANES.** *Fructifications* on the edge of the leaf, solitary, urn-shaped, ending in a thread-shaped style.

pyxidif-  
erum.

T. Leaves almost doubly winged; wings alternate, crowded, lobed, strap-shaped.

*Pet. pter.* 13. 13.

Linnaeus also refers to Ray Syn. t. 3. f. 3 and 4, but if the opinion be well founded, as I believe it is, that the real *T. pyxidiferum* is not a native of this island, those figures only represent a var. of the *T. Tunbridgense*.

Tunbrid-  
gen'se.

T. Leaves winged; wings oblong, forked, decurrent, toothed.

*Fl. dan.* 954—*E. bot.* 162—*Pluk.* 3. 5—*Bolt.* 2. 7—*H. or.* xv. 7. 50.

*Wings* sometimes, not always, serrated or scalloped. **BOLT.** *Wings* elliptical, narrow; teeth sharp. **Mr. WOODWARD.** *Leaves*, all producing fructifications when growing in an open exposure, but in chinks of shady rocks they become luxuriant, assuming the appearance of *T. pyxidiferum*, and never bearing fructifications. Perhaps in the latter state it is the plant supposed by the English botanists to be *T. pyxidiferum*. **Mr. GRIFFITH.** *Capsules* 2-valved, furnished with an elastic ring, and placed round the style-like column within the 2-leaved involucre. **Dr. SMITH.**

*Tunbridge Goldilocks.* *Hymenophyllum Tunbridgense.* **E. bot.** Moist clefts of rocks and stony places. Near Tunbridge. Amongst the pebbles at Cockbush, on the coast of Sussex. On Dartmore, Devonshire, and on the mountains of Westmoreland, Cumberland, Yorkshire, Wales, and Scotland. [High mountains at the head of Winandermere, Westmoreland. **Dr. SMITH.**—On rocks in a shady dell, very near to Llanberris. **Mr. AIKIN.** P. May—Oct.

\* (This plant is chiefly used for making Syrup of Capillaire. **E.**)

Var. 2. Fructifications on naked fruit-stalks.

Bolt. 31.

Botanists who can examine this and the preceding in a recent state must decide whether they be not distinct species. Its habit, as represented by Mr. Bolton, is considerably different from that in E. bot. and though the latter has indeed fruit-stalks springing from the mid-rib, they are not naked, but pass within the substance to the edge of the leaf.

Rocks under Dolbadern Castle near the lake of Llanberis, and on the rock called Foal foot on Ingleborough, Yorkshire. BOLT.

Var. 3. Leaves large, not bearing capsules.

Ray Syn. 3. 3. at p. 128, and 2 a young plant.—Bolt. 30.

Root woolly and hairy. Stems winged, brownish black below, green above. Leaves thin pellucid, shining, deep green. Fructifications none observable. DILL. in R. Syn. 127. n. 14. Leaves indistinctly waved or scolloped on their edges. Our plant probably only a luxuriant variety of *T. Tunbridgense*, their figure, texture, and whole habit being the same, and differing only in size. In cavities excluded from the sun. I have found specimens partaking equally of *T. pyxidatum* and *Tunbridgense*, which are figured in t. 2, f. 7. BOLT. I have seen specimens according exactly with Mr. Bolton's figure, from a root which produced other smaller leaves which bore fructifications. Mr. GRIFFITH. In the foreign specimens which I have seen of the true *T. pyxidiferum* the substance of the leaf is strong and opaque, not at all like the silky transparency of our plants, and the fructifications are large, urn-shaped, sessile, and brown orange.

Cup Goldilocks. *Trichomanes pyxidiferum*. HUDS. and BOLT. but not of LINN. On dripping rocks. At Belbank, half a mile from Bingley, at the head of a remarkable spring, R. Syn. (found there by Mr. Teesdale in 1782, but has been since extirpated. HAILSTONE in WHITAKER's Craven. E.)—In a small dark cavern under a dripping rock, a little below the spring of Elm Cragg Well. BOLT. P. Aug.

## MUSCI.

SPHAGNUM. Male flower; club-shaped: anthers flat: caps, on the same plant, sessile: mouth smooth, covered with a lid, without any entire veil.



palus'tre.

S. Branches bent downwards.

*Hedw. theor.* 12. 42 to 45, and 13. 46. 47, *hist.* i. 1. 1, *ib.* ii. 3. 9-Vaill. 23. 3-Dill. 32. 1-Fl. dan. 474-Schmid. 58. 5-Pluk. 101. 1-Scheuch. *it.* i. 5, 4, at p. 38-Lob. *ic.* ii. 242. 2-Dod. 472. 1-Ger. *em.* 1559. 1-Park. 1306. n. 1.

The capsules burst with a crackling noise. LINN. Stems growing many together, from three to twelve inches high, upright, sometimes divided. Branches at short distances, 2, 3 or 4 from the same part, heavy and hanging down from abundance of moisture. Leaves white, egg-shaped, concave, soft, tiling the branches. Capsules at first sitting, but afterwards they attain short fruit-stalks. DILL. Involucrum scaly. Capsules nearly globular, when open urn-shaped, generally several together at the top of the stem. Lid convex, pointed, deciduous.

Grey Bogmoss. Common peat Bogs. P. July—Aug.\*

Var. 2. The whole habit more slender, more branched; capsules smaller.

Schmid. 58. 6-Dill. 32. 2-Hedw. *hist.* i. 3. 3-Mapp. at p. 200. C.

Var. 3. Whole plant of a beautiful peach colour.

On Bogs in the New Forest, Hants.

In variety one the leaflets are concave, oblong, blunt; in two flat, awl-shaped, sharp. Are they not distinct species, the first growing in running, the latter in stagnant water. WILLDENOW.

alpinum.

S. Somewhat branched; upright.

Dill. 32. 3.

Schreber conjectures it to be a *Bryum*. LINN. Of a beautiful green. Capsules egg-shaped. Leaves strap-spear-shaped, pointing three ways. NECK. In a dense compact tuft, about a finger's length, sometimes dividing in the middle into two or three branches. Leaves a splendid intense green, long, narrow pointed, straight, stiff. Capsules on short fruit-stalks, colour of pale wax, egg-shaped. DILL.

\*(Mr. W. Curtis obtained the reward of the Society of Arts, for his valuable application of this moss to the packing of young trees for exportation. It should be laid in courses between the trees, and being wonderfully retentive of moisture, and seeming to possess an antiseptic property which totally prevents fermentation or putrefaction, vegetation actually proceeds during the time the trees remain inclosed. *Month. Mag.* v. 28. 309. E.)

Bogs on Cader Idris, and Snowdon DILL.—[But I have never found it there in fructification. Mr. GRIFFITH.] See *Bryum flexuosum*, var. 3.

S. Branched; creeping; capsules lateral, pointing one way. arbo'reum.  
See *Fontinalis secunda*.

**PHAS'CUM.** *Capsule* egg-shaped, furnished with a veil, but without a lid, or only an imperfect one which does not fall off.

(1) *Capsule sitting.*

P. Stemless; leaves egg-shaped, pointed, approaching. acau'lon.

*Schreb. phasc. 1. 1 and 2-Curt. 276-Dill. 32. 11-Fl. dan. 249.  
3-Happ. ii. Phasc. 1, a-Neck. meth. 1. 1, at p. 273, a veil  
magnified.-Pet. i. 95. 14.*

A few lines in length, growing in clusters, assuming rather a globular shape from the convergency of the leaves, which are rather broad, membranaceous, concave, soft, nerveless, green, delicate, ending in a short hair which is more conspicuous in the dry plant. *Capsule* little larger than poppy seed, so concealed within the middlemost leaves as to be more readily felt than seen. **DILL.** Although there is no proper lid to the capsule it opens at the top. The veil leans to one side.

*Common Earth-moss, Phascum cuspidatum. GMELIN.*  
Heaths and ditch banks, garden walks, especially in a sandy soil  
not uncommon, but on account of its minuteness and the leaves  
secreting the capsules it is very generally over-looked.

A. March.

P. Stemless; leaves egg-shaped, concave, converging, not mu'ticum.  
ending in hairs.

*Schreb. phasc.* 1. 11 and 12.-*Dill.* 32. 12-*Vaill* 27. 2.

Whole *plant* smaller than the preceding, capsules rounder and more shining, red yellow; leaves paler, not ending in a grey hair. *Capsules* ripe a month sooner. DILL.

*Phascum acaulon* β. LINN. Garden walks, hedges, ditch banks. A. Jan.—Feb.

P. Stem short; leaves spear-strap-shaped, upper ones subula'tum.  
bristle-shaped, but broad at the base.

*Hedw. stirp. i. 35—Schmid. 58. 1—Curt. 275—Fl. dan. 249.  
2—Happ. ii. Phascum. 1. b—Dill. 32. 10—Vaill. 29. 4.*

*Capsules* continuing all the summer, reddish and yellowish, in autumn ripening, turning brown, and opening, *R. Syn.* So minute as hardly to be visible if it did not grow in patches; from two to three lines high. *WEIS.* *Shoots* not branched. *Veil* covering the capsule, conical, scored, blunt, of short duration. *NECK.* In a rich soil sometimes half an inch high, and with two or three branches towards the top. *Barren* flower in the bosom of the leaves. *Lid* none. *HEDWIG.* Only three or four lines high, but growing in patches is readily found, and the capsules not larger than a seed of tobacco, are very visible on account of the slenderness of the leaves. *DILL.* They frequently fall off without opening.

*Awl-leaved Earth-moss.* Heaths in a sandy soil; ditch banks; not uncommon. *A. March—Aug.*

*repens.*

*P.* Shoots creeping; capsules lateral.

*Dill. 85. 16.*

*Stems* creeping, adhering to the bark of trees. *Branches* short, cylindrical, mostly in pairs. *Leaves* short, concave, broad at the base, spit-pointed, clothing the shoot on every side. *Capsules* extremely small; in the bosom of the leaves. *DILL.*

Trunks of trees in Yorkshire. *DILL.*

*P. May.*

*serratum.*

*P.* Shoots thread-like, jointed, branched; leaflets of the involucrem spear-shaped, serrated. *DICKS.*

*Dicks. 1. 1—Schreb. p. 8. t. 2—E. bot. 460.*

Extremely minute, at first sight resembling a thread-like Byssus, and would scarcely be obvious to the naked eye if it did not grow in patches. It seems a link which connects the *Musci* and the *Algæ*, partaking of the *Phascum* and the *Conferva*. It consists of numerous green filaments, which through a glass appear creeping, cylindrical, branched, jointed like a *Conferva*, the interstices pellucid, the joints a darker green. *Branches* alternate, forked, awl-shaped at the end. *Capsules* egg-shaped, pointed, sitting irregularly on the sides of the shoot near its base: tawny when ripe. I have not found the veil. It has no lid which separates. The involucrem consists

of three or four spear-shaped leaves, pointed and serrated. Schreber and Weber seem not to have been aware that the jointed shoots belong to the plant. DICKSON.

On the North side of Muswell Hill, near Highgate. DICKSON. April.

P. Shoots thread-like, jointed, branched; leaflets of the involucre spear-shaped, toothed. DICKSON. stoloniferum.

Dicks. 7. 2.

It has the habit of the *P. serratum*, but is rather larger, the shoots longer; the space betwixt the joints longer, and the leaflets bluntly toothed and reticulated. DICKSON.

Discovered by Mr. E. FORSTER, jun. growing on clay near Walthamstow.

P. Fertile stems short; barren stems taller, upright; alternifolium. leaves alternate, awl-shaped. DICKSON.

Dicks. 1. 2.

Barren and fertile stems growing intermixed, and forming small green tufts. Barren shoots undivided, thread-shaped, fully half an inch high. Leaves very short, awl-shaped, alternate, rather bulging at the base, expanding at the ends. Fertile shoots undivided, one-eighth of an inch high. Leaves awl-bristle-shaped, as long again as the capsule. Capsule, one at the end of each shoot, single, sitting, buried in the leaves, inversely egg-shaped, pale yellow. DICKSON.

Alternate-leaved Earth-moss. Bogs. [Gamlingay Bogs, Cambridgeshire. Mr. GRIFFITH.] April.

## (2) Capsule on a fruit-stalk.

P. Stemless; fruit-stalks crooked; leaves spear-shaped, curvicolium. taper-pointed, expanding.

Dicks. 1. 3-Hedw. stirp. i. 11-E. bot. 905.

Plant extremely minute, hardly visible to the naked eye, unless growing in clusters and bearing its swollen capsules. Involucrum, leaves straight, strap-spear-shaped; the other leaves egg-spear-shaped. Fruit-stalks very much bowed. Capsules



egg-shaped, brown and mottled when ripe. *Veil* very small. *Lid* with a short beak. Often mixed with *Bryum argenteum*. Ripens in May. HEDWIG. *Leaves* mid-ribbed, as long as the fruit-stalk.

*Crooked-stalked Earth-moss.* In barren grassy places, near Croydon. DICKSON.

*piliferum.* P. With a stem: leaves oblong, upright, hair-pointed.

*Schreb. phasc.* 1. 6 to 10.

*Stem* upright, unbranched. *Leaves* spear-shaped, ending in long hairs, tiled upwards, upright but expanding. *Fruit-stalk* extremely short. WULFEN.

*nitidum.* P. With a stem; capsules not taller than the leaves; leaves awl-shaped, keeled, somewhat bundled.

*Hedw. stirp.* i. 34—*Dicks.* 1. 3.

Exceedingly small; about one-eighth of an inch high, upright, sometimes sending out one or two branches at the base. *Leaves* slender, bristle-shaped, surrounding the stems and rising above the ends. *Capsules* egg-shaped, taper-pointed, on short fruit-stalks, sometimes from the sides of the stem and bottom of the leaves, but mostly terminating, solitary, or in pairs, naked or distinct, though the leaves extend beyond them; when ripe brownish, DICKSON.

*Shining Earth-moss.* *P. axillare.* DICKS. 1. 2. Bogs on heaths. Sept.

*rectum.* P. Stemless; fruit-stalk thrice the length of the leaves; leaves spear-shaped, mid-ribbed, fine pointed.

PLATE. XVIII. f. 1.

*E. bot.* 330.

(It differs from *P. curvicolium* in having beardless, though pointed leaves, a longer and nearly upright stalk, and longer-pointed capsule. *E. bot.* E.) *Fruit-stalk* and *capsule* a rich chesnut red. *Fruit-stalks* straight, sometimes two from the same root. *Leaves* five or six. Whole plant the twentieth of an inch in height. *Capsule* not wrinkled.

*Long-stalked Earth-moss.* Specimens from J. W. GRIFFITH, Esq. who found it amongst trees in the front of Garh House, very near the road leading to Henllan.

**FONTINALIS.** *Capsule* nearly sitting, furnished with a veil, and surrounded by a tiled involucre.

Male, bud-like, axillary; on the same plant.

Obs. Differing from *HYPNUM* in nothing but the Capsule not being supported on a fruit-stalk. WEIS.

F. Capsules lateral; leaves acute, keeled, doubled together, antipyretical; disposed in 3 rows.

*Dill.* 33. 1—*E. bot.* 359—*Vaill.* 33. 5—*H. ox.* xv. 6. 32—*Kniph.* 12—*Burb.* iii. 69. 2—*Mich.* 59. 9—*Schmid.* 58. 4—*Hedw. hist.* 1. 5. 27. ii. 9. 53; 54, 55, and 1. 5.

*Shoots* a foot long or more, branched. The primary shoot sends out lateral and terminating ones, and these branch out again. *NECK.* Floating in the water. *Leaves* two or three lines long, and half as broad, very entire at the edge. *Capsules* lateral, in the bosom of the leaves, on very short fruit-stalks, inclosed in a leafy scaly involucre. *Veil* conical. *Lid* conical, blunt, starting with a spring from the ripe capsule. *Fringe* surrounding a central point. *Seeds* green. *DILL.*

*Greater Water-moss.* Upon rocks and roots of trees, in brooks, rivulets, slow streams and ponds. P. June—Sept.\*

F. Capsules terminating; leaves egg-shaped, acute, concave; pointing three ways; always in pairs. minor.

*Dill.* 33. 2—*E. bot.* 557.

*Leaves* doubled together and keeled, on the thicker branches in pairs. *LINN.* *Shoots* four inches long, in rapid streams half

\* The Scandinavians line the inside of their chimnies with this to defend them against the fire, for, contrary to the nature of all other moss, this is hardly capable of burning.

a yard or more, very much branched. *Branches* three sided, ending in a sharp point. *Capsules* egg-shaped, on short fruit-stalks. WEBER. *Shoots* shorter, more branched, and leaves smaller, thicker and blunter than in the *F. antipyretica*. DILL.

*Lesser Water-moss.* Banks of the Thames on the walls of Lambeth Palace, and on the banks of the Isis at Oxford. DILL.

P. Aug.—Oct.

squamo'sa. *F.* Capsules lateral; leaves tiled; awl-spear-shaped.

*Dicks. h. s.—Hedw. stirp. iii. 12—Dill. 33. 3—J. B. iii. 778. 3.*

*Leaves* sometimes spear-shaped, pointed. Very nearly allied to *F. antipyretica*. HUDSON. *Capsules* egg-shaped, sitting. NECK. Long and slender; *fertile* stem generally forked; *barren* stem more branched; four to six inches long. *Leaves* long spear-shaped, partly embracing the stem, so slender as to appear awl-shaped to the naked eye. HEDWIG. *Shoot* four to twelve inches long, branched, floating in the direction of the stream, slender, black, bare near the root. *Leaves* dark green, smooth, shining, black when dry. *Branches* three-sided. *Capsules* on the side of the branches sitting, egg-shaped, immersed in a leafy involucre. DILL. The lower parts of the stems losing their leaves resemble horse-hairs matted together. Mr. STACKHOUSE. The capsules are usually produced on the shoots of the preceding year, or on the still older branches: never on the young shoots. Mr. GRIFFITH.

*Scaly Water-moss.* Mountain rivulets in Wales, the North of England and Scotland. [In the rivulet by the old castle, near Llanberis. Mr. GRIFFITH. Rivulets near Penzance. Mr. STACKHOUSE.] P. June—Oct.

penna'ta. *F.* Capsules lateral: leaves pointing two ways; expanding.

*Hedw. stirp. iii. 19—Vaill. 27. 4—Hall. enum. 3. 2, at p. 109, hist. 46. 2, at iii. p. 56—Dill. 32. 9—Schmid. 58. 2.*

*Leaves* with wavy wrinkles. *Capsules* sitting; nearly cylindrical. NECK. *Shoots* creeping and forming compact patches. *Branches* one inch long or more. *Leaves* closely compacted,

about a line in length, and one fourth of a line in breadth. *Capsules* solitary or in pairs, chiefly on one side the branches; one line long and half as broad, smooth, green, changing to reddish. *Mouth* without a ring, closed with a white fringe. *Lid* pointed. *Veil* but half the size of the capsule; smooth. *Involucrum* composed of spear-shaped, pointed, shining leaflets, taller than the capsule and closely embracing it. *POLLICH.* *Stem* thread-shaped, rigid; branches in opposite directions, decumbent with age. *Leaves* without veins.

*Feathered Water-moss. Neckera pennata.* HEDWIG. *Hypn. pennatum.* GMEL. syst. veg. Trunks of trees in the woods about Troutbeck and Ambleside, Westmoreland.

F. Aug.—Oct.

F. *Capsules* axillary; leaves strap-bristle-shaped, pointing capilla'cea. one way; those of the receptacle very long, convoluted, awl-shaped. *Dicks.* ii. 1.

*Dill.* 33. 5.

*Shoots* five to seven inches long. *Branches* sometimes divided. *Involucrum* long, from the bosom of the leaves, chiefly where branches arise; out of these come forth, *Capsules* green, small, egg-shaped. *DILL.*

*Hair-like Water-moss.* Mountain rivulets in Scotland.

F. *Capsules* lateral: leaves mostly pointing one way, elliptical, bluntish, those of the involucrum spear-shaped, pointed. *Dicks.* ii. 2. alpina.

*Dicks.* ii. 4. 1.

*Leaves* short, twisted when dry, somewhat curled. *Capsule*, together with the involucrum, thrice as large as the leaves. *DICKSON.* *Fringe* simple, its fibres twisted. *Mr. BROWN.* *Fruit-stalk* nearly as long as the capsule. Foliage black when dried.

*Alpine Water-moss.* On rocks and stones on the alpine rivulets of Scotland. [On stones in Bala-lake, and rivulets about Llanberris, also in many small rivulets about Garn, Denbighshire. River Clwyd not ten yards above high water mark, in plenty: so that it is not exclusively alpine. *Mr. GRIFFITH.* On large stones on the side of Loch Tay which are occasionally under water. *Mr. BROWN.*] Aug.



secun'da.

F. Branched, creeping; capsules lateral, pointing one way leaves egg-shaped, taper-pointed.

*Hedw. stirp.* 3. 15—*Dill.* 32. 6—*Vaill.* 27. 17.

Deep green. *Branches* sometimes subdivided. *Leaves* short, numerous, triangular, concave. *Capsules* oblong, on very short fruit-stalks, on every part of the stem, pointing one way, nearly enclosed by an involucre of narrow leaflets, ending in hairs, very numerous. *Lid* spit-pointed, brown. *DILL.* An inch high, stiff, but not upright, more or less branched at the base.

*Neckera heteromalla.* HEDW. *Hypn. heteromallum.* GMEL. syst. veg. *Sphagnum arboreum.* HUDS. On trees in orchards. On apple trees in Cornwall. Mr. STACKHOUSE.

P. Dec.—Feb.

**BUXBAU'MIA.** *Capsule* on a fruit-stalk: *outer fringe* with 16 teeth; *inner* membranaceous, plaited.

Male, bud circular.

folio'sa.

B. Stemless; capsules nearly sitting, surrounded with leaves.

*Dicks. h. s.—Schmidel. buxb.* 2, lower part of the plate, consisting of the figures distinguished by Roman numerals.—*Hall. enum.* 3. 3, at. p. 109; *hist.* 46. 3, at iii. p. 56—*Dill.* 32. 13—*Fl. dan.* 249. 1—*Happ. ii. Phascum* 1, the central plant—*Hall. it. helv.* 2. 3, in opusc. at p. 308.

*Leaves* of the involucre awned. *WILDENOW.* *Leaves*, the lowermost open, oblong, the uppermost upright, spear-shaped, taper-pointed. *Capsule* sitting. HUDS. 466.

*Phascum montanum.* HUDS. *Phascum maximum.* LIGHTF. On earth upon rocks near Llanberris in Caernarvonshire. *DILL.* 253, and on Hartfell mountain near Moffatt. *SHEFFIELD* in *Huds.* [Cwn Cennog Rocks, also about Craig du, by the road side near Llanberris. Mr. GRIFFITH.]

A. Sept.—Oct. *DILL.*—May—Aug. HUDS.

**SPLACH'NUM.** *Capsule* cylindrical, veil and receptacle very large; *fringe* with eight teeth

Male, a bud on a different Plant; circular terminating.

*S. Receptacle* globular; leaves spoon-shaped but taper-sphæricum. ing to a slender point.

*Hedwig. stirp. ii. 16-E. bot. 785.*

*Fruit-stalk* very long, greenish and reddish brown. *Capsule* very small. *Lid* blunt. *Receptacle* green. LINN. THE SON. *Stem* upright, hardly one inch high, seldom branched. *Leaves* distant, alternate, spoon-shaped but tapering to a point. *Fruit-stalks* very long, (three or four inches,) upright, terminating, tawny at bottom, green above. *Receptacle* large, globular, green. *Capsule* cylindrical, blunt. *Lid* blunt. *Fringe* eight pair of teeth, yellowish. HEDWIG. *Fruit-stalks* sometimes four or five inches high.

Mountains near Stirling. Dr. BUCHANAN, in *Dicks. p. 3.* [Growing on cow-dung near the old castle at Lanberris; also about Llyn Aled, Denbighshire. Mr. GRIFFITH.]

*S. Receptacle* nearly globular; leaves battledore-shaped, vasculo'sum. distant.

*Hedw. stirp. ii. 15.*

Like *S. ampullaceum*, but in that species the receptacle is more top-shaped and yellower; in this nearly globular and blood-coloured. *Leaves* egg-shaped, pointed. LINN. *Barren* stems two inches, fertile ones, one inch long, upright, unbranched. *Leaves* spatula-shaped, bluish, alternate, distant. *Fruit-stalk* one and a half inch high, upright, red. *Receptacle* large, pear-shaped, blood red. *Capsule* cylindrical, upright, brownish yellow. *Fringe* simple, composed of eight teeth, in pairs. HEDWIG.

*Phascum pedunculatum*. HUDS. ed. i. adopted by Linnæus. Upon bogs and cow-dung, and on the points of rocks on the tops of the Highland mountains, as Ben Lomond, and in the Isle of Sky and elsewhere. LIGHTFOOT 697.—On *Scarbæ Moss* in the parish of Kirkmichael. Dr. BURGESS. On mountainous moist heaths in Yorkshire, Westmoreland, and Wales. A. JUNE—OCT. HUDS.—P. HEDWIG.

*S. Receptacle* cruet-shaped; leaves arrow-spear-shaped, sagittifolium acute.

## PLATE XVIII. f. 2.

*E. bot.* 1116.

*Leaves* bordered, arrow-shaped, but slender; mid-rib coloured. *Capsules* with eight single teeth. Mr. GRIFFITH. About one inch high. *Stem* thickly clothed with leaves. *Fruit-stalks* from the last year's shoots, about half an inch long; not much taller than the shoots of the present year. *Capsules* nearly cylindrical.

*Arrow-leaved Splachnum. S. Turnerianum. DICKS. E. bot.* This plant was first discovered, and specimens communicated to me by J. WYNNE GRIFFITH, Esq. who gathered it about Llyn Idwel; also on the bog by the old castle near Lanberris. (It has since been found (*E. bot.*) by Mr. TURNER and Mr. SOWERBY in a bog on a high hill three miles from Exeter, towards Sidmouth. *E.*)

ampulla-  
ceum,

*S. Receptacle* inversely bottle-shaped; leaves spear-shaped, acute, generally serrated.

*E. bot.* 144—*Hedw. stirp.* ii. 14—*Fl. dan.* 822—*Dill.* 44. 3—*Vaill.* 26. 4—*H. ox.* xv. 6. 10—*Burb.* ii. 1. 1.

*Receptacle* empty, transparent, an extension of the fruit-stalk. LINN. *Stem* single or forked, from one to two inches high, upright, but feeble, and supported by other collateral stems. *Leaves* spear-shaped, acutely pointed. *Stamens* and pistils on the end of the same shoot. *Veil* bell-shaped. *Capsule* slender, cylindrical, upright. *Receptacle* large, shaped like an inverted decanter. *Lid* convex. *Fringe* single, of eight pair of teeth. HEDWIG. *Fruit-stalks* crimson, one to three inches long. *Veil* very small, deciduous.

*Purple Bottle-moss.* Turfy bogs, but only where the dung of animals has fallen. LINN. Bogs and marshes, and often upon cow-dung. LIGHTFOOT. Bogs about Hitchin Ferry near Southampton, and by W. Wickham, and Addington near Croydon. *R. Syn.* Flowers in May, ripens its capsules in July. P. HEDWIG. [Geldestone Fen near Bungay, Suffolk. Mr. STONE.]  
A. March—May.

angusta-  
tum.

*S. Receptacle* egg-shaped; fruit-stalk very short; leaves serrated upwards, hair-pointed.

*Hedw. stirp.* ii. 12.—*E. bot.* 1132.

Upright, not branched, near one inch high. *Leaves* larger towards the top of the plant, sometimes a little toothed towards the end. *Fruit-stalk* hardly rising above the leafy involucre. *Capsule* cone-shaped, but lopped, leaning a little. *Mouth* fringed with eight pairs of teeth. *Veil* oblique. HEDWIG.

In moist alpine situations in Scotland. DICKS. ii. 3. (On the side of Lochawen, Scotland. Mr. DONN. E.) P.

S. Receptacle oblong-egg-shaped; leaves spear-shaped, Breweri very entire.

*Hedw. stirp.* ii. 38.

Original stem hardly more than an inch long, but branching out shoot upon shoot to several inches. *Fruit-stalk* about one inch long, upright. *Receptacle* egg-shaped, lopped. *Capsule* cylindrical. *Lid* short. *Ring* none. *Mouth* fringed with sixteen sharp red teeth. *Veil* small. HEDWIG.

*Spl. fastigiatum*. DICKS. Moist heaths near Llyn Dwythwch, always on rotten cow-dung. BREWER, in *Dill.* 345.

Oct.—Jan. P.

S. Receptacle inversely egg-shaped; leaves egg-spear-shaped; stem none. ova'tum.

*Dill.* 44. 4-Ray 3. 2, at p. 128.

*Leaves* broad, shining. *Fruit-stalks* golden yellow. DILL. A different plant from the *S. vasculosum*. LINN. to which HUDSON improperly referred it. DICKS. II. 2.

Rotton spongy ground, as in the pastures called Emott Moor, Lancashire. Also in Montgomeryshire. DILL. On Ben Nevis. DICKSON.

S. Receptacle inversely conical; capsule egg-cylindrical; leaves spear-shaped, very entire, ending in a long taper point. mnioi'des.

*Hedw. stirp.* ii. 11—*E. bot.* 786—*Fl. dan.* 192.

*Fertile* shoots upright, undivided. *Barren* shoot generally branched. *Leaves* very entire, ending in a long point. *Fruit-stalk* upright, terminating, about half an inch long. *Capsule* upright, egg-shaped. *Receptacle* an inverted cone. *Lid* flat,



bluntly pointed. *Fringe* eight pairs of teeth, broad, united. *Veil* slender. HEDWIG. In the star-bearing shoots the edges of the leaves are sometimes set with hairs. Mr. GRIFFITH. The capsule is larger than the inversely conical receptacle, but in *S. Breweri* the receptacle is egg-shaped and larger than the cylindrical capsule. In both, the leaves are with or without hair-like points, but in the *S. Breweri* the leaves are narrower and the points longer.

Mountainous places. DICKS. I. 2. [Near Llyn Idwell, Caernarvonshire. It frequently occurs upon the dung of foxes and badgers, which are very numerous about Snowdon. Mr. GRIFFITH.] P.

tenue.

*S.* Capsules inversely conical; leaves egg-oblong, serrulated upwards, awn-pointed.

PLATE XVIII. f. 3—Dicks. 4. 2.

*Fertile* shoots half an inch high. *Leaves* concave, inversely egg-shaped, entire, bordered, reticulated, the meshes confluent, keel curved, serrulated, ending abruptly in a serrulated awn-like point. *Fruit-stalks* one to one and a half inch high, the lower half bright pink, the upper half and the capsule dark purple. *Capsule* a continuation of the fruit-stalk, inversely conical, a little leaning to one side; teeth 16, in pairs. *Veil* extinguisher-shaped, but blunt, as if lopped. *Barren* shoots, terminated by rosaceous cups; all the leaves spear-shaped, serrulated, ending in fine points; the sides approaching. Mr. GRIFFITH. Approaches very near to *S. urceolatum*, from which it differs in the habit of its leaves, its slender and almost cylindrical receptacle. DICKS. *S. purpureum* of Bot. Arr. ed. 3.

On Ben Lawers in the Highlands. [On cow-dung about Llyn Idwell. Mr. GRIFFITH.] P. June—July.

urceolatum. *S.* Receptacle inversely conical; leaves spoon-shaped, bristle-pointed.

*Hedw. stirp.* ii. 13.

About one inch high, simple or forked, one fruit-stalk on each branch. *Leaves* spoon-shaped. *Fruit-stalk* upright, near an inch high. *Receptacle* an inverted cone. *Capsule* egg-shaped, cylindrical when old. *Lid* conical, blunt. *Fringe* of eight teeth, in pairs, orange-coloured. HEDWIG.

Highlands of Scotland. On Ben High.

P.

S. Capsule a club-shaped termination of the fruit-stalk; frœlichia'-leaves battledore-shaped.

*Hedw. stirp.* iii. 40.

*Leaves* folded when dry; with much moisture they lose their colour at the edges, thence attaining a membranaceous appearance. The nerve or keel does not extend to the extremity of the leaves. *Fruit-stalks* pale upwards, of a fine pink colour near the base. *Capsule* a continuation of the fruit-stalk, inversely egg-shaped. I have not observed any teeth. Mr. GRIFFITH. *Plant* about an inch high. *Leaves* of a beautiful green, broadest at the end; mid-rib indistinct, hardly discernible in the lower leaves. *Fruit-stalks* half an inch long. *Receptacle* very short, and only to be distinguished from the fruit-stalk and capsule, when the latter is ripe. Hedwig says the mouth of the capsule has eight pair of teeth, which always stand upright and never expand, as in the other species.

Specimens sent me by J. W. GRIFFITH, Esq. who first discovered it, growing on the Eastern side of Snowdon, about 150 yards from the summit.

P. Autumn.

**POLYTRICHUM.** *Capsule* with a veil: outer fringe with 32 teeth.

Male, a circular bud, on a different plant; terminating.

P. Stem simple, proliferous; leaves strap-spear-shaped, commu'ne. serrulated; capsules oblong, 4-sided; veils woolly.

*E. bot.* 1197-Schmid. 59-Dill. 54. 1-Happ. i. *Polytrich.* 1-Mich. 59. 1. I, E, M, O, P, Q, R.-Blackw. 375-Vaill. 23. 8-Ger. 1371. 3-Gars. 129-Fuchs. 629. 1-Trag. 528. 1-J. B. iii. 760. 1-Lon. i. 222. 3-Dod. 475. 2-Ger. em. 1559, right hand fig. of the 3 lowermost-Barr. 251. 3-Kniph. 12-Trag. 946, the tallest of the figures, rising from a bed of *Hypnum sericeum*.-Park. 1052, right hand fig. of the two uppermost-Lob. obs. 645. 2. ic. ii. 245-Ger. em. 1559. 2-Ger. 1370. 2-Park. 1307, 3.

*Stems* several inches high, seldom branched. *Leaves* near half an inch long, slender, pointed, turning back, finely serrated. *Fruit-stalks* terminating, solitary, two to four inches long, surrounded by an involucre at the base. *Capsule* 4-sided; mouth fringed. *Veil* very hairy, hanging down below the capsule,

## CRYPTOGAMIA. MUSCI. Polytrichum.

ragged. WEIS. From four to twelve inches high, stiff, straight. *Fruit-stalk* golden red. *Veil* tawny. DILL.

*Great Golden Maidenhair*, or *Goldilocks*. Woods and moors in wet boggy places. P. May—June.\*

Var. 2. Leaves shorter and less flexible. DILL.

*Dill*, 54. 2—*Vaill*. 23. 6—*Fl. dan.* 295—*H. or.* xv. 7. 6. and 8—*Lob. ic.* ii. 243. 1—*Ger. em.* 1563. 14—*Park.* 1308. 9.

*Shoots* much shorter than in var. 1, and mostly branched, WEIS. *Veil* double, the outer one hairy, the inner one much smaller, white, smooth, membranaceous. LEERS. *Leaves* sharp-pointed, very entire. *Fruit-stalks* two inches long. POLlich. Whole plant smaller than the preceding, except the veil, which is larger and more pyramidal. *Stem* seldom more than one inch high, seldom branched. DILL. Female plant with one single tuft of leaves at the top of the stem, the lower part of which is naked. *Receptacle* orbicular. *Veil* single. *Lid* acutely conical, hanging over the capsule. Male, about an inch of the stem covered with leaves; and supporting at its top a tiled receptacle in the hollow of which are the filiform male organs. Mr. STACKHOUSE. Mr. Griffith thinks this distinct from the preceding, the capsule having 64 teeth, whilst in that it has only 32; but such as I have examined have 64.

On hills, dry or wet.

P. May—June.

Var. 3. LINN. Leaves terminating in hairs.

*Happ. i.* Polytr. 2—*Dill*. 54. 3—*Vaill*. 23. 7—*Buxb. i.* 62. 3, a barren plant.

*Stems* not more than half an inch long, simple, leafless below. *Leaves* entire at the edges, ending in grey hairs. *Fruit-stalks* terminating, about one inch long. WEIS. *Fruit-stalks* half an inch high, or a little more. *Capsule* with its veil, two lines long, and one broad. POLlich. *Leaves* bent inwards a little, not serrated, terminating suddenly in a long whitish hair. *Fruit-stalks* and their sheathing involucrum purple. DILL. Barren and fertile plants in distinct patches.

Dry woods and sandy barren heaths.

Spring.

subrotundum,

P. Shoots simple; leaves strap-spear-shaped; indistinctly serrated upwards; capsules roundish.

\* When the Laplanders sleep all night in the woods, they make themselves beds of this moss; and bears collect it for the same purpose. Squirrels and birds use it in making their nests; (and small brooms may be made of the stems. E.)

*Hedw. stirp.* i. 13—*Curt.* 102—*Dill.* 55. 6—*H. ox.* xv. 7. row 2.  
7—*Pet. mus. f.* 22—*Vaill.* 26, 15, *veil wanting*.

*Veil* open, larger than the capsule. LINN. *Leaves* obscurely serrated. *Capsules* roundish, nodding. HEDWIG. *Leaves* sometimes slightly serrated towards the point. *Capsules* nearly as broad as they are long.

*Mnium polytrichoides*. LINN. *Polytrichum polytrichoides*. HUDS. 470. *Pol. nanum*. HEDWIG. *Heaths*. Muddy soil. [Spink's Grove in a dry ditch. Mr. STONE. Commons about Kinver, in large patches.] P. May.

P. Shoots simple; leaves spear-shaped, serrated at the end; *aloi'des*. capsules cylindrical; veil woolly.

*Hedw. stirp.* i. 14—*Dill.* 55. 7—*Burb.* i. 63. 1—*Vaill.* 29. 11.

*Stem* near half an inch high, seldom branched. *Fruit-stalks* growing to the length of an inch, fixed rather below the top of the stem. *Capsule* cylindrical, upright, but leaning as it becomes older. *Veil* larger than the capsule. WEIS. *Shoots* prolific when old. *Leaves* serrated. *Capsule* whitish when ripe. *Receptacle* none. LEERS. *Leaves* awl-shaped, serrated, opaque, reddish near the point, with an appendage somewhat broader than themselves. *Capsule* contracted beneath the rim, tapering at the base. Mr. GRIFFITH. *Leaves* serrulated at the ends and also on the back of the mid-rib. *Capsules* twice as long as they are broad.

*Polytrichum nanum*. HUDS. 470. *Pol. aloides*, HEDWIG. *Heaths*. Muddy soil. Near Spink's Grove. Brome, near Bungay, Suffolk. Mr. STONE.—Plantations at Edgbaston, near Birmingham. P. March—July.

Var. 3. *Leaves* strap-shaped, serrated, pellucid, with an appendage of the same width; capsules roundish, not tapering at the bottom. Female plants grey green. Male darker coloured; they grow in distinct patches. *Leaves* hair-pointed. *Fruit-stalk* and *veil* orange coloured. Male flowers tiled, cup-shaped, sitting, terminating, red. Mr. STACKHOUSE.

[Ditch banks and road sides about Henllan, Denbighshire. Mr. GRIFFITH. Hills in Cornwall, common. Mr. STACKHOUSE.] Spring.

P. Shoots rarely branched; leaves spear-shaped, fleshy; *hercy'ni-* capsules urn-shaped, upright; veils with scattered cum. hairs.



*Hedw. stirp.* A. 15—*E. bot.* 1219.

*Stem* upright, undivided, one inch long. *Leaves* strap-shaped; keeled, very entire, bowed in, alternate, nearly upright, pointed, naked. *Fruit-stalk* terminating, solitary, upright, an inch long. *Veil* conical, pointed, pale. *Capsule* upright, oblong, or cylindrical, the mouth between toothed and fringed. *Lid* conical, somewhat pointed. HUDSON. *Mouth* fringed with 32 short teeth, connected at the base. HEDWIG. *Stems* or male buds formed of five spoon-shaped pointed leaves. MR. GRIFFITH. (*Root* densely woolly. *E. bot.* E.) *Capsule* urn-cylindrical, rather narrower in the middle.

*Incurved Hair-moss.* *Bryum incurvum.* HUDS. Pastures and rocks about Llanberris. MR. DAVIES. In the Highland mountains. DICKSON. P. June—Oct.

alpinum.

P. Shoots very much branched; leaves spear-shaped, toothed; fruit-stalks terminating; capsules egg-shaped.

*Dill.* 55. 4—*Hall enum.* 3. 6. at p. 109; *hist.* 46. 6. at iii. p. 56—*Fl. dan.* 296.

Shoots from half to two inches long; very much branched. *Leaves* slightly toothed. *Capsules* egg-shaped, leaning when ripe. *Lid* conical, beaked. *Mouth* with a ring; fringe fine, short, upright, white. WEBER. *Capsule* unequally distended, green, blackish when old. *Lid* saffron-colour, its point white. DILL. From two to three inches high.

Mountainous heaths in the North of England, and mountains of Wales and Scotland.

β. HUDS. *P. urnigerum*, which see. P. June—Aug.

urnigerum. P. Shoots very much branched; leaves spear-shaped, tooth-serrated; fruit-stalks axillary; capsules cylindrical.

*E. bot.* 1218—*Dill.* 55. 5—*Vaill.* 28. 13—*Fl. dan.* 297.

*Capsules* when ripe nodding. LINN. Two or three inches high; with lateral branches, somewhat forked, rising to nearly an equal height. *Fruit-stalks* lateral, two or three inches high. *Involucrum* red. *Capsule* cylindrical, egg-shaped, tawny, upright, leaning as it ripens. *Lid* yellow, beak white. *Mouth* with a ring, and covered by a white membrane. *Receptacle*

none. *Barren shoots* unbranched, two inches high, stellated at the ends. LEERS. Beak of the lid very slender. Mr. GRIFFITH.

*Urn-bearing Hair-moss.* At the foot of Cader Idris. DILL. [At Roslin, Rivelstone, and other places near Edinburgh. Frequent by road sides in the North of Ireland: also in the Highlands of Scotland. Mr. BROWN.—(On Gateshead Fell, near Newcastle. Mr. WINCH. *E. bot. E.*)—Near the road side between Denbigh and Voylas, by the rivulet before you arrive at a place called Pennsylvania; and on Cader Idris with the shoots hardly half an inch high, though the fruit-stalks as tall as usual. Mr. GRIFFITH.] P. June—Aug.

**MNIUM.** *Capsule* with a veil: *fringe* with 16 teeth; sometimes, though rarely, with 4.

**Male.** *Bud* circular, rarely knob-like, mostly on a separate plant.

(1) *Capsules* upright, cylindrical.

**M.** *Capsules* slender; lid needle-like; leaves spear-shaped, acicula're. upright, mostly pointing one way.

*Dicks. h. s.—Hedw. stirp. iii. 33—Dill. 46. 25.*

One inch or one inch and half high. *Branches* upright. *Leaves* crowded. *Fruit-stalks* near an inch high, dark red; on the ends of the younger branches. DILL. *Leaves* spear-shaped. *Fruit-stalks* not half an inch higher than the tops of the shoots.

*Br. aciculare.* LINN. *Dicranum aciculare.* HEDWIG. On stones thinly covered with mould near Llanberris, Caernarvonshire, and in the West Riding of Yorkshire. DILL. In the Highlands and Lowlands frequent. LIGHTFOOT.—Rocks on the side of the hill about fifty yards above Garthmeilio, the seat of R. W. Wynne, Esq. Denbighshire. Mr. GRIFFITH.

P. May—Oct.

**Var. 2.** *Stems* trailing; leaves somewhat open. HUDSON.

*Fl. dan. 1001. 1—Dill. 46. 26—Hall. it. herc. in opusc. p. 152. f. 1 and 2, Bryum, &c.—Vaill. 27. 16—Pet. mus. cent. i. 1. f. 74—H. ox. xv. 5. row 4. 29.*

*Shoots* branched, floating in the water or resting on stones. *Leaves* brown green. *Fruit-stalks* short and blackish. *Capsules* oblong, straight, dark green. *Veil* black. DILL.

On large stones that lie in the rivulets in the moors of the Peak of Derbyshire. PET. and in the mountain torrents near Llanberris, Caernarvonshire. DILL. [In the first brook after crossing Pont y Alwen, between Denbigh and Cerrig y druidion Mr. GRIFFITH.] P. Aug

Var. 3. Shoots slenderer upright; leaves pointing one way.

Like var. 2, but shorter, less branched, more upright, and of a yellower green. Mr. GRIFFITH. Grows with var. 1.

*pellucidum*. M. Stem simple; leaves egg-shaped.

*Schmid.* 3-*E. bot.* 1020-*Fl. dan.* 300-*Dill.* 31. 2-*Hall. enum.* 4. 8. at p. 118; *hist.* 45. 8. at iii. p. 41-*Vaill.* 24. 7.

Shoots an inch long, seldom branched. Leaves in four rows; mid-rib purple, ending in a point. Fruit-stalks terminating, an inch long, pellucid, whitish. Capsules cylindrical, yellowish. Veil very long, WEIS, (torn at the base, orange-coloured at the tip. Lid conical, reddish, thin. Teeth 4, shining brown, erect, pyramidal, all separate from top to bottom. *E. bot. E.*)

Four-toothed Moss. *Tetraphis pellucida*. HEDWIG. Woods. Moist shady places, and decayed roots of trees. A. Jan.—July.

Var. 2. Leaves exceedingly narrow, and pellucid.

*R. Syn.* p. 78. n. 5-*Dill.* 31. 2. *E. F.*

Heaths near Woolwich.

Mar. *R. Syn.*

*scoparium*. M. Shoot branched; leaves strap-spear-shaped, bent back, pointing one way.

*Dicks h. s.*-*E. bot.* 354-*Dill.* 46. 16-*Curt.*-*Vaill.* 28. 12-*Kniph.* 6-*Buxb.* ii. 4. 1-*Fl. dan.* 824. 1-*H. or.* xv. 7 11 and 13.

Grows in dense patches, branched, nearly upright, one to three inches high. Leaves slender, long, ending in a long sharp point, expanding. Fruit-stalks one or two inches high, generally solitary. Capsules cylindrical, thick, a little crooked, scored. Lid, beak as long as the capsule. Mouth toothed. Veil long. WEIS. Frequently several stalks in one involucre. WILLDENOW.

*Bryum scoparium*. LINN. *E. bot.* *Dicranum scoparium*. HEDWIG. Heaths, woods, trunks of trees, shady banks, and dry pastures. P. Feb. and March. CURT.—June and July. HUDS. April—July. LIGHTF.

(2) *Capsules leaning, roundish.*

M. Capsules roundish; lid blunt; shoot sometimes branch-*fontanum*.  
ed, upright; leaves spear-shaped, slender, bent inwards  
at the points.

*Dill.* 44. 2-*E. bot.* 390-*Vaill.* 24. 10-*Fl. dan.* 298-*Happ.*  
iii. 7-*H. or.* xv. 6. row 3. 8-*Mich.* 59. 4-*Pluk.* 47. 2.

The old shoots covered with brown knap, and buried three inches deep. From these proceed slender cylindrical shoots, some of which end in stars. *Fruit-stalks* two inches long; proceeding from the shoots of the preceding year. *NECK.* Readily known by its stiff habit. *Shoots* two to four inches long. *WEIS.* *Leaves* serrated, open, in the young shoots mostly pointing one way. In this species, and also in the *Mnium palustre*, the fertile and barren shoots adhere so closely at bottom as to appear but one plant. *LEERS.*

*Br. fontanum.* HUDS. [Low wet meadows, turf bogs, and springs, Earsham. Near Bungay, Suffolk. Mr. STONE.—Cold clear streams in Westmoreland on the sides of hills. The veil falls off in May. Mr. GOUGH. P. May—Aug.

M. Capsules pear-shaped; lid blunt; shoots rarely branch-*uliginosum*.  
ed; leaves oblong-spear-shaped, blunt.

*Dicks. h. s.*—*Hedw. stirp.* i. 1 and 2-*Dill.* 49. 53-*Schmid.*  
57. 4.

*Shoots* very short. *Fruit-stalks* three inches long, terminating. *Capsules* dull yellow, inversely egg-shaped. *Lid* blunt. Growing in patches. *Leaves* scattered, two lines or more in length. *Fruit-stalks* terminating. *Capsules* upright, afterwards bending a little; one line long. *Lid* short, pointed, white. *Veil* smooth, reaching but half way down. *POLLICH.* Primary stem not branched, but after bearing fruit it sends out a new shoot from its extremity, as is the case with many Mosses with terminating fruit-stalks. *Stamens* and *pistils* in the same or in separate flowers. *Ring* none. *Fringe* double, 16 teeth in each. The roots are so closely attached together, that without great care it breaks off, and the plant appears without a stem. *HEDWIG.* Short, sitting, sometimes undivided, sometimes with one or two branches. *Leaves* green, narrow. *Fruit-stalks* about two inches high, of a shining gold colour. *DILL.*

*Bryum trichodes.* LINN. *Massia uliginosa.* HEDWIG. Wet meadows, in dense patches. P. May—June.



(3) *Capsules leaning; oblong.*

sim'plex.

M. Capsules egg-oblong; fruit-stalks lateral; leaves awl-shaped.

*Hedw. stirp.* ii. 34—*E. bot.* 1215—*Dill.* 50. 59—*H. ox.* xv. 7. row 2. 19—*Burb.* iv. 65. 2.

Shoots half an inch long. *Fruit-stalks* coloured, standing on the ends of the young shoots, but on the rib of the old ones. *NECK.* Not branched, often one inch long, growing in patches. *Leaves* crowded at the ends of the stem, hair-like, not crisp when dry. *Fruit-stalks* one or two together, eight or nine lines long. *Capsule* inversely egg-shaped. *POLLICH.* *Lid* rather broader than the capsule, beaked. *Mouth* elegantly toothed. *DILL.* With sixteen teeth in a single row, purplish. *HEDWIG.*

*Br. rubrum.* *HUDS.* ed. i. *Br. simplex.* *LINN.* *Dicranum varium.* *HEDWIG* and *E. bot.* Grassy sandy places.

A. Mar.—May. P. *HEDWIG.*

heteromallum.

M. Capsules egg-shaped; lid taper-pointed, bent; shoot seldom branched; leaves bristle-shaped.

*Hedw. stirp.* i. 26—*E. bot.* 1272—*Vaill.* 27. 7—*Dill.* 47. 37—*Fl. dan.* 479—*H. ox.* xv. 6. row 3. 5, and in 7 the leaves straight—*Burb.* ii. 2. 8.

In habit resembling the *Mnium scoparium*, but much smaller. *Capsules* egg-shaped. *Lid*, beak short. *WEIS.* *Stem* half an inch high, upright, but not straight. *Leaves* not curled when dry. *Barren flower* always terminating. *Fruit-stalks* upright, single, or in pairs. *Veil* opening at the side, deciduous. *Lid*, beak bent. *Fringe* of sixteen teeth. *HEDWIG.* Seldom branched. *Leaves* hair-like, fine green, gradually narrowing from the base, mostly pointing one way. *Fruit-stalks* half an inch to one inch high, green, changing to fine red, sometimes in pairs. *Veil* pale green. *DILL.*

*Silky Heath Fork-moss.* *Bryum heteromallum.* *LINN.* *Dicranum heteromallum.* *HEDWIG* and *SMITH.* Hedge banks, heaths, and roots of trees. On *Snowdon.* *DILL.* [Cwm Idwell. Mr. GRIFFITH.—Further Plantation, Edgbaston.]

A. March—May.

Var 2. Leaves shorter, lower ones pointing two ways.

*Dill.* 47. 38.

*Leaves* yellow green, suddenly narrowing from the base, upwards 1-rowed, downwards 2-rowed, curled when dry. *Veil* very slender, pale. *DILL.* *Leaves* broad and sheathing at the

base, then bristle-shaped. *Fruit-stalks* shorter than the shoot. *Capsules* egg-oblong, equal in length to twice its breadth.—Specimen from Mr. Griffith, who gathered it on the rocks of Clogwy Dû y r Arddu p, Snowdon.

M. Capsule egg-oblong; lid taper-pointed, bent; shoots glau'cum. branched; leaves egg-shaped, acute, tiled.

*Dill.* 46. 20—*Vaill.* 26. 13—*H. ox.* xv. 6, row the last, 22.

*Stem* with the appearance of *Sphagnum palustre*. *Leaves* whitish. *Lid* awl-shaped. LINN. *Leaves* three lines or more in length, very entire. *Lid* awl-shaped, very sharp pointed. *Mouth* fringed. POLLICH. Whole plant brittle, greyish when growing, or pale glaucous green; whitish when dry. *Veil* slender, white. DILL. One to three inches high; branches thick. *Fruit-stalk* one inch, but only half an inch higher than the shoots.

*Br. glaucum.* LINN. *Dicranum.* HEDWIG. Mountainous heaths. [Near the copper-works at Llanberris; but very rarely bears fruit. Mr. GRIFFITH.] P. Aug.—Nov.

M. Capsules egg-oblong, small; lid taper-pointed, bent; pedu'cens. shoot hairy; leaves spear-shaped, reflected, acute.

*Hedw. Theor.* 8. 1 to 4—*Dill.* 46. 23, 24—*Pluk.* 44. 7—*Pluk.* 49. 1, several shoots rising from the top of that of the last year.

Shoots from one to three inches, with rust-coloured hair-like fibres on the lower part. *Leaves* slender, keeled, crooked, pellucid, sometimes wrinkled. *Fruit-stalks* sometimes in pairs; terminating. *Capsules* brown when dry. DILL.

*Br. pellucidum.* LINN. Marshy and shady places. Near North Bierly, not far from Bradford, Yorkshire, and on the sides of lakes on the Glyder and Snowdon Mountains.

P. June—Sept.

M. Capsules egg-oblong; lids conical; shoots branched, palus'tre. forked; leaves awl-shaped, acute.

*E. bot.* 391—*Dill.* 31. 3—*Vaill.* 24. 1—*H. ox.* xv. 6. row 3. 9—*Schmid.* 56. 2.

*Capsules* crooked after shedding their seeds. *Fruit-stalks* slightly waved. Mr. GRIFFITH. *Fruit-stalks* yellow. REYG. often two inches long, RELHAN, from the forks of the stem. NECK. crowded. *Stems* upright, two to five inches high; mostly

two, sometimes with three divisions. *Leaves* slender, soft, pellucid, keeled, yellow green, yellow when dry. *DILL.* *Stems* two or three inches high, branching towards the top into two, three, or four shoots. *Leaves*, lower ones downy. *Summit-leaves* flat, large, forming stars, in which are the barren flowers. *Fruit-stalks* from the tops of the last year's shoots, which now likewise support new shoots. *Capsules* leaning.

Turf bogs and wet heaths, marshes and moors. [Near Bungay, Suffolk. Mr. STONE.] P. June—July.

Var. 2. Stem branched, upright. Fruit-stalks from the bottom of the leaves. HUDSON.

*Dill.* 31. 4.

*Stem* sometimes simple. *DILL.* 236. *Fertile flowers* not discovered. *DILL.* in *R. Syn.* 78. n. 3.—Smaller than the preceding. *Fruit-stalks* axillary, numerous, not terminating in capsules, but in small globular heads containing a powder. This seems to be the male plant.

*M. ramosum.* HUDS. ed. i. 403, and GMELIN Syst. veg.

purpureum. *M.* Capsules nearly cylindrical; fruit-stalks axillary; shoots branched; leaves oblong, acute, keeled.

*Dill.* 49. 51—*H. ox.* xv. 6. row 4. 4, some of the fruit-stalks terminating.

Grows in very dense patches. *Stem* upright, mostly forked, and these shoots sometimes dividing again. *Leaves* spear-awl-shaped, in some shoots forming terminating stars. *Fruit-stalks* an inch high, at first upright, afterwards a little leaning. *Lid* conical, pointed, scarlet. *Veil* upright, afterwards oblique. WEIS.

*Bryum purpureum.* HUDS. and LIGHTF. *Dicranum purpureum.* HEDWIG. Walls, heaths, rocks, and gravelly banks and pastures. April.

Var. 2. Leaves less rigid; spear-shaped.

*Dill.* 49. 52.

*Leaves* ending in hair-like points. *Capsule* finely pointed. *DILL.*

On Emott Moor on the borders of Lancashire; and Shobdon Marsh, Herefordshire. [Near Llyn Aled Lake. Mr. GRIFITH.] June.

(4) *Capsules drooping.*

M. Capsules globular, toothed; shoots branched; leaves arcuate, oblong-spear-shaped, taper-pointed, scored. DICKSON.

*Dicks. h. s. and fasc. iii. 7. 3-E. bot. 1237-Dill. 39. 36.*

*Leaves* upright but spreading; serrulated. *Male flower* terminating, star-like. *Fruit-stalk* terminating, crooked, surrounded by young shoots. *Capsule* mouth narrow. *Fringe*, teeth short, upright, acute, red. *Lid* minute, scarcely beaked. DICKSON. The fuscous woolly matter which surrounds the shoot is a constant attendant. *Fruit-stalks* at the base of the branches, golden red, hardly half an inch long, crooked. *Capsule* golden yellow, globular. Mr. BRADBURY. *Leaves* serrulated chiefly towards the end.

*Curved-stalked Mnium. Hypnum chrysocomum.* Bot. arr. ed. ii. *Bartramia arcuata.* E. bot. In bogs in the Northern parts of Yorkshire, and on moist places on Glyder Mountain. DILL. Boggy places in Scotland. DICKSON. [On bogs with the *Mnium palustre* in Greenfield, Saddleworth, Yorkshire, and Stayley, Cheshire. Mr. BRADBURY. By the side of Avon las, near Pistyll, in Llanberris parish. Mr. GRIFFITH. Foot of Pentland hills, near Edinburgh. Mr. BROWN.] Nov.

M. Capsule spear-shaped; lid blunt; shoots somewhat branched; leaves egg-shaped, acute. nu'tans.

*Hedw. stirp. iii. 8-Dill. 51. 74.*

Shorter than the preceding. *Capsules* pear-shaped, *i. e.* largest at the end. *Leaves* deeply keeled, closing together when dry, very much crowded and compressed. *Stem* and leaves at the bottom black. *Lids* very short and blunt. DILL.

*Mn. turbinatum.* HEDWIG. *Mnium triquetrum* γ. HUDS. 491. *Br. ventricosum* γ. Bot. arr. ed. ii. Marshy places. On Shooter's Hill near Eltham, and in Wales.

Spring and Summer. DILL.

M. Capsules pear-shaped, lids flat; shoots rarely branched; leaves oblong, taper-pointed. hygrometricum.



*E. bot.* 342—*Dill.* 52. 75—*Vaill.* 26. 16—*H. or.* xv. 7. 17—*Happ.* i. *Mnium*. 2—*Fuchs.* 629. 2—*Trag.* 528. 2—*J. B.* iii. 760. 2—*Lon.* i. 222. 4—*Dod.* 475. 1—*Ger. em.* 1559. 4, the middle one of the 3 lower figures.—*Park.* 1052, left hand upper fig.—*Fl. dan.* 648—*Ger.* 1371. 4.

Grows in large patches. Stem one to two inches high, but mostly buried in the earth. Fruit-stalk a full inch long. Capsules pear-shaped, golden yellow. *WEIS.* It may be found in December, very small and close to the ground, the leaves very fine, from the midst of which projects the young fruit-stalk like the point of a pin. In January the four-sided veil appears, of a straw-colour; in February and March the capsules are found, which ripen in April and May. Leaves tender, pellucid, veinless. *DILL.*

*Bryum hygrometricum.* *HUDS. E. bot. Koelreuteria hygrometica. HEDWIG.* Common in woods, heaths, garden walks, walls, old trees, decayed wood, and where coals or cinders have lain. *A. March—May.*

If the fruit-stalk be moistened at the bottom, the head makes three or four revolutions: if the upper part is moistened, it turns the contrary way. *LINN.*

*cuspidatum.* *M.* Capsules egg-shaped; leaves egg-shaped, pointed, serrated.

*Dill.* 53. 79—*Vaill.* 26. 18—*Happ.* ii. 6.

Shoots half an inch high; lower leaves smaller, blunter, alternate, upper leaves larger, more acute, pellucid, smooth, sharply serrated and pointed at the end by an extension of the mid-rib. Fruit-stalk half to one inch long, when old saffron-coloured, issuing out of a purple tubercle encompassed by slender leaves. Capsules egg-shaped. *DILL.* Fruit-stalk either solitary or several together. *WILLDENOW.*

*B. serpyllifolium cuspidatum.* *HUDS. and Bot. arr. ed. ii.* Woods, moist heaths, shady places, and in bogs on heaths and meadows. *P. April.*

*hornum.* *M.* Capsules egg-shaped; leaves spear-shaped, acute serrated.

*Dill.* 51. 71—*Mich.* 59. 2—*Curt.—Vaill.* 24. 4 and 5—*H. or.* xv. 6. row the last, 3 and 4, as it sometimes appears before it produces capsules.

From half to one inch high, but larger in moister situations; mid-rib red, stiff. *Leaves* green, pellucid, finely crenated. *Fruit-stalk* saffron red, shining, one to two inches long, bent like a swan's neck. *Capsule* oblong; nodding, swollen, dark green. *Lid* brown. *Leaves* at the base of the fruit-stalk slender. DILL. Male shoot simple; female branched at the base. *Leaves* sharply serrated and ending in a sharp point.

*B. hornum.* HUDS. CURT. Woods, moist shady and boggy places. P. Feb.—May.

*i.* Capsules oblong-egg-shaped; fruit-stalks from near capilla're. the root; leaves egg-shaped, keeled, bristle-pointed.

*Dill.* 50. 67—*Fl. dan.* 1122. 2—*H. ox.* xv. 6. row 5. 19—*Vaill.* 24. 6.

*Shoots*, at the ends of some a very small brown star. Very nearly allied to *B. caespitium*. LINN. *Leaves* short, broad, ending in a short hair. *Fruit-stalk* one inch long, issuing from the last year's shoots. *Capsules* swollen, reflected. *Lid* hemispherical, shining. RAY. *Capsules* less pendent when ripe. DILL. From half to one inch high. Its sitting shoots, and expanding upper leaves, distinguish it from the *B. caespitium*, though it should not be in fruit. NECK. Differs from *B. caespitium* in its greater size, the lids of its capsules being sharp pointed, and its leaves not shining. WEIS.

*Bryum capillare.* LINN. HUDS. Mud walls, heaths, roofs. P. Feb.—March.

*i.* Capsules oblong egg-shaped; fruit-stalks from near *anno'tinum*. the root; leaves pellucid, egg-shaped, taper-pointed.

*Dill.* 50. 68.

*Leaves* spear-shaped, pointed, not twisting when dry, turning brown when soaked in water. *Fruit-stalk* one inch long. *Capsule* oblong, pendent. *Lid* pointed; blunter when old. DILL. *Stem* half to one inch high, simple, or branched almost from the bottom. *Leaves* very entire, those on the stellated roots broader.

*Bryum annotinum.* HUDS. Woods and moist shady places. Cryb y Ddeseil. Mr. GRIFFITH.]

P. March—April, HUDS.—Summer. DILL.

puncta'tum. M. Capsules oblong-egg-shaped; stem unbranched; fruit-stalks often several together; leaves inversely egg-shaped, very entire, blunt, (broad, E.) dotted.

*E. bot.* 1183—*Dill.* 53. 81—*Happ.* ii. 4—*Vaill.* 26. 5—*Pluk.* 45. 7—*H. ox.* xv. 6. 39, and 40.

It varies in the fruit-stalks being solitary or incorporated, and also in the fertile shoots being upright, and the barren shoots creeping. WILDENOW. Grows in large patches. *Stems* simple. *Leaves* with a scarlet rib, cartilaginous and purple at the edges. *Fruit-stalks* terminating, generally single, sometimes three or four together; one to two inches high; thicker downwards. *Capsules* nodding, egg-shaped. *Seeds* greenish. *Shoots* without capsules, ending in roses. WEIS. *Leaves* pellucid, smooth, pale green. *Fruit-stalks* one to three on a plant. DILL.

*Dotted Thread-moss.* *Bryum serpyllifolium punctatum.* HUDS. *M. serpyllifolium.* *Bryum punctatum.* *E. bot.*

Var. 2. *punctatum.* Bot. arr. ed. ii. Leaves longer, more pellucid.

*Dill.* 53. 80.

*Leaves* longer and blunter than  $\beta$  of Linnæus. *Capsules* not so pendulous. *Lid* spit-pointed. *Fruit-stalks* three to five on a plant. DILL.

In bogs in the West Riding of Yorkshire.

*Capsules* half ripe in spring. DILL.

undula'tum. M. Capsules oblong-egg-shaped; fruit-stalks several together; leaves oblong, waved, serrulated.

*Dill.* 52. 76—*Vaill.* 24. 3—*Mich.* 59. 5—*Tourn.* 326. *E.—Pet. gaz.* 95. 16—*H. ox.* xv. 6, row the last, 1—*Neck meth. f.* 6. at p. 273, a star-like head.

*Root* strong, creeping. *Shoots* three or four, to five or six inches long, branched or unbranched. *Leaves* thin, pellucid, strap-spear-shaped, waved and serrated. *Capsule* pendent; lid blunt. *Veil* straight, pointed. DILL. *Barren* flower surrounded by strap-shaped leaflets, in the centre of shoots ending in roses. *Leaves* strap-shaped; mid-rib large.

*Bryum serpyllifolium undulatum.* HUDS. *M. serpyllifolium undulatum.* Bot. arr. ed. ii. Moist shady woods about the roots of trees and hedges. P. April.

M. Capsules oblong-egg-shaped ; shoots proliferous ; leaves proliferum. spear-shaped, pointed, forming terminating roses.

Dill. 52. 77-Buxb. 11. 1. 3.

Stems straight, naked. Leaves terminating, large, shining, pellucid, disposed in a circle, widening upwards, ending in a point, scarce sensibly serrated. Capsules on a different plant, rarely appearing, pendent; lid reddish, blunt. Fruit-stalk one inch long, thick. DILL. Very elegant in form: shrub-like. Stem naked at bottom, foliage from one centre at the top. Leaves from three to six lines long, and two broad. Other shoots often arise from this foliage. Some of these are barren roses, but others end out fruit-stalks, one or two inches long, bearing pale orange capsules. Veils not observed. WEIS.

*Bryum serpyllifolium proliferum* HUDS. and Bot. arr. ed. ii. Wet places in woods and heaths near Bishop's Castle. DILL.—Bungay, Suffolk. Mr. STONE.] Winter.

Var. 2. Capsules and fruit-stalks very long.

Dill. 52. 78.

Fruit-stalks reddish. Capsules pendent. Lid blunt. Leaves pellucid, ending in hairs, but not grey ones. Root woolly, grey. DILL.

Wet places in woods and heaths.

I. Capsules oblong-egg-shaped ; shoot unbranched ; leaves crūdum. spear-shaped, acute.

Hedw. stirp. i. 37-Dill. 51. 70-Vaill. 26. 12.

Leaves green, almost silky. Fruit-stalks long, red. LINN. Half an inch high ; not branched. Leaves, upper ones thrice as long as the lower, crowded, upright but open. Capsules upright, then pendent, and lastly upright again. Veil turning up when the capsule hangs down. Lid hemispherical, beak short, ciliated plants not so tall. A powdery brown substance in the centre of the star. LEERS. Fertile stem half an inch ; Barren stem an inch high, or more. Leaves, the upper ones a little clothed towards the ends. Capsule bent horizontally. Mouth, outer fringe of sixteen teeth. HEDWIG. Fruit-stalks from the sides of the young shoots ; pale red. DILL. The whole plant is a silky gloss. Lower leaves broader and shorter than those above ; a few of the uppermost sometimes very slender point-



*Bryum crudum*. LINN. HUDS. Fens in Cambridgeshire DILL. Woods about Rydall, Westmoreland. HUDSON. [Crilly Ddeseil, Caernarvonshire, Cader Idris, Merionethshire. Mr. GRIFFITH.] P. March—June

*cæspiti-*  
*cium*.

M. Capsules oblong-egg-shaped; shoots short, but branched; leaves spear-shaped, hair-pointed.

Curt. 166—Dill. 50. 66—H. ox. xv. 6. row 5. 15—Vaill. 29. 7.

*Fruit-stalks* red at bottom, yellow green at top. REY. Grows in broad dense patches. Only a few lines high; branched at the top, covered with a brown knap at bottom. *Leaves* very small, crowded, shining. *Fruit-stalks* an inch (or two) high, issuing from the roses of last year's shoots, surrounded at bottom with a leafy sheath or fence. *Capsule* at first upright slender egg-shaped. *Lid* red, shining, nipple-shaped. *Mouth* slightly fringed. *Veil* brown, changing to tawny red. WEIS. and DILL. *Leaves* mid-ribbed. *Fruit-stalks* from an oblong bulb, invested with hair-like fibres. Outer coat of the capsule with sixteen teeth.

*Bryum cæspiticiu*m. HUDS. CURT. Old walls, stones, roofs, grass, gravel, banks and hillocks. P. Feb.—April.

*pseudo-tri-*  
*quetrum*.

M. Capsules oblong-egg-shaped; shoots branched; leaves egg or spear-awl-shaped, bordered, keeled, pointing in 3 directions.

Hedw. stirp. iii. 7—Dill. 51. 72—Vaill. 24. 2 and 2—H. ox. xv. 6, row 5. 20.

*Capsule*, the neck downwards becomes gradually narrower. DICKSON. *Stems* simple or branched; branches sometimes very slender, at others thicker and shorter; thickest where the fruit-stalks put forth, the leaves there expanding in the form of stars. *Fruit-stalks* near two inches long, purple. *Capsules* bent downwards, belying, green. *Lid* small, shining, white. *Veil* short, brown, red. DILL.

*Bryum ventricosu*m. DICKS. and GMELIN. *Bryum triquetrum*. HUDS. *Mnium triquetrum* according to LIGHTF. 715. HUDS. and RELH. n. 786, but in the specimens of *Mnium triquetrum* in the Linnaean herbarium and Ehrhart's *phytophylla-cium* the capsules are upright, slanting. DICKSON.

*Leaves* pointing three ways; not pressed to when dry. Mr. GRIFFITH; who limits the reference to DILL. to the figures marked D. E. *Leaves* mid-ribbed, bordered, bristle-pointed; upper ones spear-egg-shaped, lower ones egg-shaped.

Turf bogs and marshy places. [Turf pits, Ellingham Fens, Norfolk. Mr. STONE. On mud or gravel by the sides of rivulets and springs, in the ascent to Snowdon and Glyder. Mr. GRIFFITH.] March—May.

Var. 2. Larger in all its parts.

*Dill.* 51. 73—*Fl. dan.* 1122. 1.

*Leaves* spear-shaped, alternate. *Fruit-stalks* red, sometimes branched. *Leaves* pellucid, green, shining. When about to flower it sends forth some reddish shoots, with finer leaves encompassed by others of a paler green. Flowers in the summer. DILL. *Leaves* almost hair-pointed.

*Bryum triquetrum* β. HUDS. 490. *B. ventricosum* β. Bot. rr. ed. ii. In marshy places. The red kind is found in the mountain torrents of Snowdon, and the green in high boggy heaths about London and Oxford. DILL. [Near Celin house, two miles from Holywell. Mr. GRIFFITH.] Summer.

**BRYUM.** *Fruit-stalk* terminating, issuing out of a tubercle: *capsule* with a veil.

Male, a *bud* either on the same or on a different plant: often axillary.

#### SUBDIVISIONS OF THE BRYUMS.

A. Capsules sessile, or nearly so.

B. Capsules on fruit-stalks, UPRIGHT.

1. *Stemless.*

2. *Stem very short, rarely branched.*

3. *Stems trailing.*

4. *Stems upright.*

a. Capsules roundish.

b. Capsules egg-shaped.

c. Capsules oblong.

## C. Capsules on fruit-stalks, LEANING.

1. Stem none, or very short and unbranched.
2. Stems upright.

## D. Capsules on fruit-stalks, DROOPING.

1. Stem none, or very short and unbranched.
2. Stems upright.

## A. Capsules sitting, or nearly so.

apocar'pum. B. Capsules sitting, terminating; beak bent; veil ve  
small,

*E. bot.* 1134—*Schmid.* 57. 1—*Vaill.* 27. 15—*Hedw. stirp.* i. 3.  
*Dill.* 32. 4—*Fl. dan.* 480—*Happ.* iii. 2.

Shoots one to two inches high; somewhat branched. *Leaves* at the ends of the shoots and branches, paler, longer, hairy the end; from amongst these rise up *fruit-stalks*, very short, purple, with a yellow tubercle. *Capsules* oblong, smooth, green, changing to a yellow. *Mouth* purple, open, elegantly fringed. *Lid* scarlet. *Veil* pale yellow, deciduous. The fruit-stalks are so enveloped by the leaves at the extremity of the shoots, that neither they nor the capsules can be distinctly seen, but the scarlet lid strikes the eye. *WEIS.* (*Fringe* of sixteen red, entire, spreading teeth, broad at the base, tapering to a fine point. *E. bot. E.*)

*Sessile Bryum. Grimmia apocarpa.* HEDWIG, and *E. bot.* Rocks, stones, and trees. [Walls and roofs of houses, in Burgay, Suffolk. Mr. STONE.] Nov.—April

Var. 2. Shoots longer and more branched, leaflets ending in hairs.

*Hedw. stirp.* i. 40—*Dill.* 32. 5, *B dry, A moistened*—*Vaill.* 27. 18.

In spreading tufts like the preceding, but the stems are longer, more branched, more leafy. *Leaves* broader, terminating in hairs longer; dilute green in winter, hoary in spring. The ends of the branches often hooked, which never happens in the preceding.

ceding variety. *Capsules* inclosed in leafy scales, green; the young ones at the ends, the old ones at the sides of the branches.

DILL.  
*Hedwigia ciliata*. HEDW. Rocks and trees. West Riding of Yorkshire. Grey Weathers near Marlborough. Hills about Bishop's Castle. DILL. [King's Park, Edinburgh. Mr. BROWN. Upon stones, on hills about Stayley Bridge, near Manchester. April. Mr. BRADBURY.] Nov.—Jan.

B. *Capsules* sitting; beak straight; leaves straight, keeled. sessile.  
 ed.

*Dill. 55. 10—E. bot. 1325.*

Grows in tufts. *Stem* about an inch high, somewhat branched. *Leaves* numerous, straight, keeled, pellucid when wet, opaque and darker green when dry. *Fruit-stalks* very short, thick at the bottom. *Veil* brown, hairy, striated. DILL.

*Bryum striatum* var.  $\gamma$ . Bot. arr. ed. ii. Rocks near Bangor. DILL. [On stones on the side of a river which are washed by the water in high floods. Mr. GRIFFITH. (Mr. SOWERBY gathered it on upright posts by the Thames at Wandsworth. *E. bot. E.*) Autumn.]

B. *Capsules* sitting, axillary; veils hairy, conical. tecto'rum.

*Hedw. stirp. 11. 37—Dill. 55. 9—Vaill. 27. 10—H. ox. xv. 6. row the last, 13.*

Plant smaller than the *B. striatum*, leaves smaller, darker green: veil paler and more distinctly toothed at the base. DILL. Differs also from it in wanting the inner fringe, and having the edge of the veil scalloped. HEDWIG.

*Orthotrichum anomalum*. HEDWIG. On stones, walls, and the ground. Feb.—April. DILL.

Var. 2. *Leaves* mid-ribbed, hair-pointed. *Capsules* on short fruit-stalks, terminating, with sixteen slender expanding teeth. *Veil* hairless, ribbed. On the trunk of a tree in the poultry yard, at Edgbaston. April.

B. *Capsules* oblong, sitting, axillary or terminating; veil striat'um.  
 hairy; leaves spear-shaped, acute.



*edw. stirp.* ii. 36—*Neck. meth.* 1. 2, at. p. 273, a capsule magnified.—*Dill.* 55. 8—*Fl. dan.* 537. 3—*Vaill.* 25. 5 and 6.

Obs. Nearly allied to the POLYTRICHUMS, but wants the eshy receptacle below the capsule. LINN.

*Shoots* one inch high, branched. *Capsules* lateral. *Mouth* nearly smooth, without a ring. *NECK.* Branched; two or three inches high. *Leaves* as if gnawed at the ends. *Florets* of both sorts on the same or on distinct plants. *Fruit-stalk*, very short, sheathed at the base. *Capsules* egg-shaped. *Lid* small, beak blunt. *Fringe* double, sixteen teeth in each. Is found both in flower and in fruit almost all the year. HEDWIG.

*Polytr. striatum.* HUDS. *Orthotrich. striatum.* HEDW. In woods, on trees. The veils appear in winter, and the capsules in Feb. March, and April. DILL. P.

#### B. Capsules on fruit-stalks, UPRIGHT.

##### (1) Stemless.

*cuneifolium.* B. Capsules cylindrical, toothed; leaves wedge egg-shaped, pellucid, reticulated. DICKS.

*Dill.* 45. 15—*Buxb.* i. 64.

*Leaves* shorter, broader, softer than in the *B. murale*, pellucid, green, not hoary with hairs. Grows much crowded together, but not in a circular form. DILL.

*B. murale* β. HUDS. and Bot. arr. ed. ii. On banks of earth near Streatham, Surrey, and at Oxford. Winter. DILL.

*mura'le.* B. Capsules oblong; lids conical, acute; shoots very short, subdivided; leaves mid-ribbed, egg-shaped, acute, hair-pointed.

*Dill.* 45. 14—*Vaill.* 24. 15, in a tuft—*Buxb.* i. 64. 4—*Mich.* 59. 7.

Sometimes grows in tufts, but often spreads in shady places. *Leaves* opaque, approaching, rigid, fine green when wet, dull green when dry. DILL.

The lower leaves generally lose their terminating hairs. When the lid is carefully removed from the capsule, the mouth

of the latter is seen adorned with a conical pencil of rich saffron coloured hairs twisted spirally, and projecting so as to fill up the lid.

Walls, roofs, tiles, stones, rocks and sandy places, everywhere. P. Nov.—March.

B. Capsules inversely egg-shaped, lopped; lid convex; obtusum. leaves spear-egg shaped, taper-pointed. Dicks.

*Dicks. 4. 7. a. b.*

*Fringe* none. *Veil* bell-awl-shaped. *Leaves*, under the microscope, reticulated, finely toothed. Differs from *B. truncatum* in the beaked lid, and its capsule being longer, &c. Dicks.

Stones and rocks on Ben Crechan, Scotland.

B. Capsules egg-shaped: leaves egg-shaped, concave, hair-pointed. Dicks. ii. 4.

*Dicks. h. s.—Hedw. stirp. i. 6—H. ox. xv. 7-18.*

Very minute, unbranched, with scarcely any stem. *Flowers* terminating. *Fruit-stalk* upright, not longer than the capsule. *Veil* reddish brown. *Lid* conical, beak oblique. Very common on mud walls, spreading in broad and dense patches; seldom on the ground.

*Gymnostomum ovatum*. HEDWIG. Pastures. Mud walls.

April—May.

B. Capsules oblong, fringed: leaves concave, egg-awl-shaped. Dicks. ii. 6.

*Hedw. stirp. i. 28.*

*Stem* unbranched, upright, very minute, not more than two or three lines high. *Leaves* concave and egg-shaped at the base, but very long and slender upwards. Barren flowers in the bosom of the leaves. *Fruit-stalks* on the same plant, terminating, thrice as long as the stem, nearly upright. *Fringe* single, of 16 teeth, deeply divided, red.

*Trichostomum pusillum*. HEDWIG. In sandy places.

A. Feb.—March.

B. Capsules pear-shaped: leaves flat, oblong, acute.

pyriforme.

*Dicks. h. s.—E. bot.* 413—*Dill.* 44. 6—*Fl. dan.* 537. 1—*Vaill.* 29. 3—*H. ox.* xv. 7. row 2. 16. p. 631—*Burb.* i. 64. 1.

*Fruit-stalks* half to one inch long. *RELH.* n. 1015. *Leaves* one line broad, one and a half long. *Involucrum* none. *Fruit-stalk* about three lines long. *Capsule*, mouth without fringe. *POLLICH.* *Veil*, before the capsule swells, 4-sided; afterwards it tears into 2, 3, or 4 segments. *Leaves* tender, pellucid, pale green. *Capsules* large for the size of the plant, which rises but little above the ground. *DILL.*

Heaths, hedges and ditch banks. [Near Bungay, Suffolk. Mr. STONE.] A. Feb.—March and April.

stella'tum. B. Capsules pointed, bearded; leaves egg-spear-shaped, pointed, somewhat rolled in. *DICKS.* ii. 6.

*Dill.* 49. 56.

On ditch banks and brinks of rivulets, Scotland.

calca'reum. B. Capsules inversely conical, toothed; leaves upright, cylindrical, bluntish. *DICKS.*

*Dicks. h. s.—E. bot.* 191—*Dicks.* 4. 3.

A dwarfish plant, smaller than *B. paludosum*, but the capsules sufficiently large and conspicuous. *Lid* conical, with a beak somewhat slanting. *Veil* slender, slanting. *DICKSON.* *Capsules* with 16 teeth; not with 12 as in Mr. Dickson's figure.

On limestone rocks near Newmarket Heath.

cervicula'tum. B. Capsules egg-shaped, unequal, toothed; leaves very slender.

*Hedw. stirp.* iii. 37. A.

Not branched; upright. *Lower leaves* very minute, spear-shaped; upper oblong-spear-shaped, concave, with a very long tapering point, expanding when moist, closing but not curling when dry; pale green. *Capsules* egg-shaped but less convex on one side, which gives it an appearance of leaning. *Lid* fine red, slanting, taper-pointed.

*Dicranum cerviculatum.* *HEDWIG.* On Hampstead Heath near London, in dry peaty places. *DICKSON.*

paludo'sum. B. Capsule very blunt, mouth wide: leaves bristle-shaped,

*Dill.* 49. 53.

Differs from *B. viridulum* in its brown capsules, and the leaves not curling when dry. LINN. Extremely small, only observable from its growing in a quantity together. *Leaves* minute, hair-like, but expanding. *Fruit-stalk* terminating, two or three lines long. *Capsules* egg-shaped. *Mouth* wide, minutely fringed. *Veil* slender, upright. Differs from the *B. virens* in the darker green of its leaves, their being slenderer, not curling when dry, and in having smaller capsules. WEIS. *Leaves* very slender, scarce sensibly broad, soft, dull green. *Capsules*, lid deciduous, leaving a large open for the size of the capsule. DILL. Differs from *B. viridulum* in the leaves, which, though bristle-shaped, are broad at the base, the mid-rib only visible in the broader part; fruit-stalk twisting when moistened; capsule egg-shaped, with an orifice equal to its greatest diameter. Mr. GRIFFITH.

In sandy marshes and turfy ground in Yorkshire. RICHARDSON, in *Dill.* 387. Moist rocks, and sometimes decayed wood in damp shady places. LIGHTFOOT. [On stones and roots of trees in damp situations in Garn Dingle, Denbighshire, particularly on sand stones by the petrifying spring. Mr. GRIFFITH.]  
A. March—May.

B. Stemless; capsules nearly upright; fruit-stalks very long; leaves like bristles. Cel'sii.

*Dill.* 49. 54.

Sent from Sweden to Dillenius, but now found in Scotland by Mr. DICKSON. Shoot very minute. *Fruit-stalk* three quarters of an inch high. *Lid* pointed.

On rocks on the Highland mountains. DICKSON.

B. Capsules oblong; shoot very short; edges of the leaves turned in. rigidum.

*Hedw. stirp.* i. 25—*E. bot.* 180—*Dill.* 49, 55.

*Stems* very short. *Leaves* very entire, bluntish, flat above, convex underneath, naked. *Fruit-stalk* terminating solitary, upright, half an inch long, purple. *Veil* conical, pale. *Capsules* fringed, smooth. *Lid* taper-pointed, purple at the base, half as long as the capsule. HUDSON. Fertile plant always taller and slenderer than the barren plant, but both of them



short and thick. *Fringe* red, composed of 32 long slender filaments, spirally twisted together when moist. HEDWIG. *Leaves* stiff, like those of heath. DILL.

*Barbula rigida*. HEDW. Moist rocks near Wigmore, Herefordshire. BROWN, in *Dill.* On Ingleborough, Yorkshire. HUDSON. [Thorpe, near Norwich. Dr. J. E. SMITH.]

P. Nov.—July.

paucifolium.

B. Capsules oblong; lid taper-pointed; veil reaching half way round; leaves strap-spear-shaped.

*Dicks. h. s.*—*Dicks.* 1. 5.

Whole *plant* scarcely more than the eighth of an inch high, the smallest of this Genus which I have hitherto seen. *Leaves* three or four, when viewed through a magnifying glass strap-spear-shaped, ribbed underneath. *Fruit-stalk* yellowish, sometimes two from the same point. *Capsule* upright, oblong, somewhat cylindrical, brownish when ripe, with a swollen red ring. *Lid* taper-pointed, somewhat crooked, nearly as long as the capsule. *Veil* oblique, minute. *Fringe* toothed; teeth numerous, bent in. Differs from *B. paludosum* in the leaves not being bristle-shaped, and in the shape of the capsule. DICKSON.

*Weissia controversa*. HEDWIG. *B. viridulum*. DICKS. fasc. i. p. 3; who believes it, on the authority of the Linn. herbarium to be the *B. viridulum* of Linnæus, whose synonyms he thinks are erroneous, and have misled our botanists. I am far from doubting the well known accuracy of Mr. Dickson, but it is as easy to suppose a mistake existing in the herbarium as in the Sp. Pl. and I rather believe this to be the case, because the specific character of the *B. viridulum* with "tiled leaves," does not at all apply to Mr. Dickson's plant with only three or four leaves placed regularly at the top of the root, though truly descriptive of the plant Linnæus refers to in his synonyms. Under the existing circumstances it seems necessary to give it a new trivial name, the *B. Dicksoni*, and I expect *B. viridulum* being allotted to other species. Fortunately the circumstance of its having only four or five leaves, allows us to adopt a name unobjectionable, and expressive. Boggy ground, on Enfield Chace. June.

B. Capsules on fruit-stalks, UPRIGHT.

(2) *Stem very short; rarely branched.*

Heimii.

B. Capsules oblong; shoot upright; leaves spatula-shaped, taper-pointed, toothed upwards.

*Hedw. stirp. i. 30.*

*Stem* near half an inch high, unbranched, upright. *Fruit-stalks* terminating, near an inch high. *Veil* opening at the side. *Capsule* long-egg-shaped. *Lid* beak bent to one side. *Fringe* none.

*Gymnostomum Heimii.* HEDWIG. Sandy places; in Northern exposures. Feb.—June. P.

B. Capsules toothed: fruit-stalks slanting: shoots nearly stemless: leaves egg-shaped. DICKS.

*Dicks. iii. 7, 8.*

Grows in dense patches. *Leaves* crowded, keeled, finely reticulated, dark green, the upper ones closing. *Capsule* oblong-egg-shaped. *Fringe* toothed. *Beak* slanting. *Veil* awl-shaped. DICKSON. Found by Mr. Forster, jun. on dead trunks of trees at Walthamstow.

B. Capsules roundish pear-shaped, mouth naked; shoots fasciculate. leafless below; leaves in bundles, egg-spear-shaped, taper-pointed. DICKS.

*Dicks. h. s. and fasc. iii. 7, 5—E. bot. 1245.*

*Roots* strong, brown. *Shoots* nearly upright. *Leaves* toothed, twisted at the end; with a mid-rib. *Lid* very blunt. *Veil* bellying, contracted at the base. DICKSON.

Barren sandy places. P.

B. Capsules egg-cylindrical, mouth with a membranaceous flexifolium. fringe; shoots nearly stemless; leaves waved, spear-shaped, serrated. DICKS.

*Dicks. fasc. iii. 7, 9.*

From two to four lines high. *Leaves* crowded, upright, but expanding, acute, keeled, serrated upwards, yellow green, twisted when dry. *Fruit-stalk* terminating, near half an inch high, pale, yellow. *Capsule* cylindrical, but a little swollen at the base. *Lid* conical, blunt, rather thicker at the top. *Veil* awl-shaped.

On barren sloping ground near Croydon. DICKSON.

convolutum. B. Capsules cylindrical; involucre leaves blunt, rolled up so as to form a cylinder; leaves spear-shaped.

Dicks. h. s.—Hedw. stirp. i. 32—Dill. 48. 44—Schmid. 57. 5.

Grows in dense tufts, half an inch or more in height; branches issuing out of the thickened tops of the old shoots, which are stellate at the ends. Leaves loosely disposed, ending in hairs. Fruit-stalks from the last year's shoots, one inch long, encompassed at the base by an involucre of awl-shaped hairy leaves. WEIS. Sometimes with forked branches. Leaves very slender, hardly a quarter of a line broad at the base, very entire. Involucre terminating, embracing closely the base of the fruit-stalk. Capsule cylindrical, a line long, hardly a quarter as broad. Mouth without a ring; fringe red. Lid slender, upright, awl-shaped. Veil pointed, smooth, thread-shaped, reaching but half way. POLLICH. Inner involucre-leaves heart-shaped, blunt.

*B. setaceum*. HUDS. 481. LIGHTF. 729.—(*Mnium setaceum* of LINN. is a different species which has rigid bristle-shaped leaves.) DICKS. *Barbula convoluta*. HEDW. in the plate named *setacea*. Heaths, hedge banks, and walls, very common.

A. March.

dealbatum. B. Capsules roundish, somewhat bent, toothed and fringed; leaves spear-shaped, acute, expanding. DICKS. ii. 8.

Dicks. 5. 3. a. b. c.

Habit that of *B. trichodes*, from which it differs as follows. Leaves spear-shaped, mostly pale, under the microscope reticulated, pellucid, finely but obscurely serrated at the end. Lid, beak short. DICKSON.

Mountains in Scotland; on Ben Lawers.

extinctorium. B. Capsules cylindrical, entirely covered by the bell-shaped veils; shoots simple; leaves spear-shaped.

Dicks. h. s.—E. bot. 558—Hedw. stirp. i. 18—Fl. dan. 1001—Dill. 45. 8—Vaill. 26. 1.

Fruit-stalks terminating. Capsule, mouth not fringed. NECK. Grows thick together in patches, half an inch to one inch high;

sometimes a little branched towards the top; very leafy, ending in roses. *Fruit-stalks* not half an inch long, upright. *Capsules* cylindrical. *Lid* sharp-pointed. The veil covering the whole capsule and hanging down below it, distinguishes this from every other Moss. DILL.

*Leersia vulgaris*. HEDW. Grassy places in a sandy soil, dry heaths, and rocks. [Castle walls, Bungay, Suffolk. Mr. STONE. Denbigh Castle. Mr. GRIFFITH.] P. Oct.—Aug.

Var. 2. Veil cut at the base.

*Hedw. stirp.* i. 19; *theor.* 9. 10 to 14, the fructification; *hist.* ii. 5. 24. a, the seeds—*Fl. dan.* 1001. 2—*Dill.* 45. 9.

Whole plant larger and more branched. *Capsule*, mouth fringed. *Veil* cut at the base into six segments; grey, bent inwards. LINN. *succ.* n. 990. *Leaves* retaining their green colour when dry.

*Leersia ciliata*. HEDW. Rocks about Ludlow Castle. Ripe in its capsules in summer, the preceding variety in winter. DILL. Early in the Spring to July. P.

B. Capsules oblong, bearded; shoots upright; but little mucronulatum. branched; leaves spear-shaped, keeled. DICKS. tum.

*Hedw. stirp.* i. 23—*E. bot.* 1299.

*Leaves* expanded when moist, twisted when dry. Barren and fertile flowers on separate shoots, terminating. *Sheathing involucre* conical. *Fruit-stalks* one or two together, about half an inch long, upright. *Ring* none. *Fringe* spreading when dry, spirally twisted together when wet. *Barbula unguiculata*. Hedwig, who cites Dill. 48. 47, as a synonym, believing his plant to be the same as Mr. Hudson's *B. unguiculatum*, but Mr. Dickson thinks they are different. From a comparison of the two, it appears to me that the leaves in Hedwig's plant are less crowded than in that of Dill. longer and more properly strap-spear-shaped, than spear-shaped, but I cannot perceive any good grounds for a specific difference. If they are distinct, Mr. Hudson's character rather applies to the plant of Hedwig, and Dickson's to that of Dillenius.

On sandy commons.

March—April. P.



virid'ulum. B. Capsules egg-shaped; leaves spear-shaped, taper-pointed, tiled, but expanding.

*Dicks. h. s.*—Curt. 132—Hedw. stirp. ii. 5—E. bot. 1367—Dill. 48. 43—Vaill. 29. 5.

So small as hardly to be discernible; if it did not grow in large patches. Stems one to three lines long, upright, seldom branched. Leaves very slender, sharp at the ends. Fruit-stalks terminating the last year's shoots, one or two on a shoot. Capsules egg-shaped; fringed at the mouth. Lid red, pointed.

Veil pointed. WEIS. Fruit-stalks green, changing to a pale yellow. Capsules from green to yellow brown, and shining. Veil slender, the colour of the capsule. Lid very short, reddish, its point bent. DILL. Leaves awl-shaped, quite straight, curled when dry. DICKSON. Fruit-stalk not twisting when wet. Capsules red at the base and at the mouth, which is small and contracted. Leaves strap-awl-shaped, the mid-rib extending the whole length. Mr. GRIFFITH.

*Diminutive Green Bryum. B. virens. Dicks. Weisia controversa. HEDW. Grimmia controversa. E. bot. Boggy ground. June.*

trunca'tulum. B. Capsules lopped; leaves flat, sharp-pointed.

Curt. 132—Hedw. stirp. i. 5—Dill. 45. 7—Vaill. 26. 2—Buxb. ii. 2. 2—Fl. dan. 537.

Capsules, when the lid is fallen off, appearing quite lopped, inversely egg-shaped, and yellowish red, therefore evidently distinct from the *B. viridulum*. LINN. Fruit-stalks three or four lines long. Capsule without a ring. NECK. One of the least of the Mosses; grows in patches. Stem three or four lines long, unbranched, ending in roses. Lid with a long slender point. Veil with a long taper point. WEIS. Sheathing involucre conical, lopped.

*B. truncatulum. HEDW. Ditch banks, meadows, pastures and heaths.*

*A. Sept.—Feb.* Hasselquist observing this plant growing in great abundance upon the walls of Jerusalem, conjectures it may be the Hyssop of the Scripture, wherein Solomon is said to have known all plants, from the Cedar of Lebanon even unto the Hyssop, that groweth upon the wall.

rufes'cens. B. Capsules egg-shaped, toothed; leaves strap-shaped, pellucid, flaccid, pointing one way. Dicks.

*Dicks. iii. 8. 1-E. bot. 1216.*

*Shoots* nearly upright, unbranched. *Leaves* toothed, (and reticulated. *E. bot. E.*) *Fruit-stalk* terminating. *Fringe* red, (of sixteen cloven teeth. *E.*) *Lid* conical, a little bent.

*Red Fork-moss.* Banks of muddy rivulets in Scotland. DICKSON.—(By the rivulet at the Hermitage near Edinburgh. Dr. SMITH. In wet fields near Forfar. Mr. G. DONN. *E. bot. A. Feb. E.*)

B. Capsules egg-urn-shaped; toothed, nearly stemless; callisto'mum. leaves upright, strap-awl-shaped, DICKS.

*Dicks. 7. 10.*

*Shoots* nearly stemless, upright, leafy. *Leaves* upright, strap-awl-shaped, yellow green. *Fruit-stalk* brown; thicker upwards. *Capsule* egg-shaped, brown, when dry the upper part becomes twisted. *Fringe* with a ring, toothed; ring prominent; teeth half the length of the capsule; upright but approaching, flattish, red orange. *Lid* conical. *Veil* not observed.

Found by Mr. DICKSON on barren rocks on Highland mountains in Scotland.

B. Capsules egg-cylindrical; leaves awl-shaped. pal'idum.

*Hedw. stirp. i. 27-Dill. 49. 57.*

*Stem* short, naked at bottom, or with a few very short minute leaves. *Leaves* awl-shaped, mid-ribbed, very slender, rather pointing to one side. *Fruit-stalk* one to one and a half inch high, pale green or reddish. *Capsules* upright. *Veil* reaching but half way round, deciduous. *Lid* bluntly conical, somewhat bent.

Specimens from J. W. GRIFFITH, Esq. of Garn, who first found it on our island, growing on the sides of turbaries (peat holes) near Llyn Aled, Denbighshire.

B. Capsules on fruit-stalks, UPRIGHT.

(3) *Stems* trailing.

B. Capsules egg-shaped; shoots ascending; branches late-hypnoïdes, short, fruit bearing.

Var. 1. *lanuginosum*. Shoot branched, lying down; leaves oblong, hair-pointed; capsules oblong; veils entire.

*Hedw. stirp. iii. 2-B. bot. 1348. Dill. 47. 32-H. bot. xv. 5. row 2. 7-Hall. hist. 46. 4. at in. p. 69.*

Leaves a little toothed at the sides, but this most conspicuous in the dried plant. Capsule upright. Mouth fringed with sixteen teeth, hair-like, separate quite down to the base. Hedw. Shoots rigid, from three to twelve inches long; prostrate. Branches numerous, short, thicker than the main stem. Leaves slender, pale green, ending in a long grey hair. Fruit-stalk terminating, or nearly so; short, yellow. Capsules small, egg-shaped. Lid red, sharp-pointed. Dill. Lid regularly conical, but very taper, and about one-third the length of the capsule.

Toothed Hoary Fringe-Moss. *B. hypnoides*  $\alpha$ . LINN. & HUDS. *Trichostomum lanuginosum*. HEDW. On Snowdon and Glyder. Mendip Hills. Hills in Yorkshire, DILL. Autumn.

Var. 2. Leaves in bundles, not closely set, spear-awl-shaped, mid-ribbed, doubled together, ending in a short whitish hair; curled when dry.

*Dill. 47. 28. A. something resembles it, but that is described as hairless.*

Branched upwards. Fruit-stalk from one quarter to three quarters of an inch long, varying greatly in different specimens.

*B. Hypnoides*  $\beta$ . LINN. and HUDS. On Snowdon. DILL. and Mr. GRIFFITH. Sometimes the branches are so short as to resemble bundles of leaves, and then the fruit-stalks are short in proportion. DILL. 47. 28. B. if furnished with hairs would be a pretty good resemblance of it in this state. Specimens from Mr. Griffith.

Var. 3. Leaves in bundles, egg-awl-shaped, mid-ribbed, keeled, pointed with a white hair.

From two to three inches long, trailing, branches and fruit stalks longer than in var. 1. None of the figures exactly resemble it.

Var. 4. Leaves in bundles, spear-awl-shaped, mid-ribbed, doubled together, hair-pointed, curled when dry.

Near two inches long. Less trailing than the preceding, but chiefly differing in the shape of the leaves, and being of bright yellow green.



Var. 5. Leaves in bundles, spear-awl-shaped, mid-ribbed, not hair-pointed: fruit-stalks very short.

Specimen from Mr. Griffith, who thinks it ought to be considered as a distinct species; and in-favour of this opinion we may observe, that all the preceding varieties have hair-pointed leaves, but this and the subsequent ones are not so. The stems more or less trailing, and the leaves growing in bundles are always sufficient to distinguish the *B. hypnoides* and its reputed varieties from the *B. canescens*, whilst the presence or absence of that hoariness which is caused by the hairs at the points of the leaves, will at once distinguish the four first varieties of the *hypnoides* from the subsequent ones.

Var. 6. Leaves bundled, spear-awl-shaped, mid-ribbed, doubled together, curled when dry: lid not beaked.

Dill. 47. 30.

Leaves crowded, very small, yellowish or brownish green. Fruit-stalk from the upper branches, half an inch long. DILL. It forms a cushion on the rocks. LINN. In the specimens before me some plants are distinctly male, and others female. *B. hypnoides* ♂. HUDS.

On Snowdon. DILL. and Mr. GRIFFITH.

Aug.

Var. 7. Shoots long, prostrate, leaves pointing one way, in bundles or distinct, awl-shaped, bent, very slender and fine, but not hair pointed.

There is not any figure of this. The plant is brown green four or five inches long, branches few, very short; fruit-stalk scarcely longer than the leaves. Shoot distinct, composed of a bundle of brown red fibres. Specimen from Mr. Dickson.

#### B. Capsules on fruit-stalks, UPRIGHT.

(4) Stems upright.

a. Capsules roundish.

B. Capsules pear-shaped, toothed; leaves egg-shaped, reticulatum. serrated, reticulated. DICKS. ii. 4.

Dicks. 4. 6. a. b.



*Shoots* upright. *Leaves* distant, rather pointed, of a remarkable net-work texture, transparent, serrated towards the end, below very entire. *Fruit-stalk* from the base of the plant. *Capsule* teeth bent in. DICKSON.

On Ben High in the Highlands.

penna'tum.

B. Capsules very small; fruit-stalks terminating; shoot simple, upright, wing-cleft; leaves pointing 2 ways, spear-shaped, very entire.

Hedw. stirp. 1. 29-Dicks. 1. 4.

*Plant* half an inch high; naked at bottom. *Barren* stems wing-cleft. *Fertile* stems, some star-like, some bearing capsules; very slender, bright green. *Leaves* distinct, egg-spear-shaped, pointing from two opposite lines. *Fruit-stalks* very slender, green, one-eighth of an inch long, rising out of an involucre resembling that of the barren flower. *Capsule* upright, very small, green, roundish, but lopped when the lid has fallen off. *Veil* none observed. *Lid* very blunt, reddish. *Fringe* naked. DICKSON. *Veil* falling off entire. HEDWIG.

*Mnium Osmundaceum*. DICKS. fasc. i. *Gymnostomum pennatum*. HEDW. Hollows in old hedge banks, in a rich soil on the road from Zele to S. Tawton, four miles from Oakhampton, Devon, Mr. NEWBERRY. B. April—June.

verticilla'tum.

B. Capsules small, roundish; fruit-stalks twisted when dry; shoots all of the same height; leaves hair-pointed.

Dicks. h. s.—E. bot. 1258—Dill. 47. 35.

Grows in dense tufts. *Stems* slender, adhering closely together, about an inch high; branched. *Leaves* hair-like, fine pale green, towards the bottom of the plant whitish. *Fruit-stalks* numerous, short, pale, terminating. *Capsules* small, roundish, greenish. *Lid* very small, red, pointed. DILL. Haller unites it with the *B. aestivum*. LINN.

*Whorled Bryum*. *Grimmia verticillata*. E. bot. and Fl. Brit. In Yorkshire. RICHARDSON, in Dill. On rocks near the sea, Banger. BREWER, in Dill. P. April—Aug.

pomifor'me.

B. Capsules globular; lid flat; shoot branched; leaves strap-spear-shaped, tiled, but spreading; bristle-pointed.

Dicks. h. s.—E. bot. 998—Dill. 44. 1—Fl. dan. 478—Vaill. 24. 9. and 12—Burb. v. app. n. 4—H. or. xv. 6, row 4. 6.

Leaves bristle-shaped. Fruit-stalks solitary, purplish below. Capsules globular. Veil very much pointed, very small, oblique. LINN. Grows thick together in broad patches. Stems about an inch high; the old ones branched, the young ones simple. Leaves very slender, serrated towards the ends. Fruit-stalks full half an inch long, from the ends of the younger shoots, one or more in a place. Capsule at first slender, when ripe globular. Mouth wide, fringed, the teeth turned inwards. Veil deciduous. WEIS. and DILL. Leaves mid-ribbed. Hedwig seems disposed to refer this to his new genus *BATRACHIA*.

Apple Bryum. *Batrachia pomiformis*. SWARTZ. E. bot. Heaths, rocks, and banks. A. Feb.—April.

B. Capsules roundish; fruit-stalks terminating; shoot macrocarpon. branched; leaves expanding, spear-shaped, slender.

Dill. 47. 29; A. B. the fresh, C. the dried plant—Fl. dan. 476—Happ. iii. 3.

Plant yellow green; much branched; leaves slender, curled. Capsule brown, beak very small. DILL. Fruit-stalk but little higher than the tops of the shoots. Capsule very small. Lid red, with a very slender needle-shaped point.

Br. *Hypnoides* γ. HUDS. On Snowdon. Mr. GRIFFITH.

B. Capsules egg-oblong, fringed; fruit-stalks very short; shoots nearly upright; branches expanding, rising nearly to the same height; leaves strap-spear-shaped. pa'tens.

Dicks. 4. 8. a. b.

Shoots somewhat slanting, nearly cylindrical, tapering towards the base, very much branched. Branches unequal, rather pointed, somewhat higher than the fruit-stalks. Leaves tiled, pressed to, the points standing out, quite straight, strap-spear-shaped, pointed, channelled. Fruit-stalks from the sides of the uppermost branches, few, solitary, very short, often zig-zag. Capsules rather pear-shaped, small. Fringe fringed. DICKSON. Capsules egg-oblong, as expressed in the figure.

On rocks in mountainous rivulets. On Ben Nevis, Scotland. [Rocks above the chapel at Gwydir, Caernarvonshire. Mr. GRIFFITH.]

stellig'erum. B. Capsules semi-globular, naked; leaves strap-shaped, in star-like whirls. DICKS. ii. 3.

Dicks. 4. 4. a. b.

Shoots branched, star-like at the end. Leaves expanding, a little bowed back at the ends; somewhat whirled. Fringe naked. Lid flattish, the beak somewhat oblique; as long as the capsule. DICKSON.

Woods in the Highlands.

acu'tum. B. Capsules roundish; shoots branched, pointed; leaves bristle-shaped, upright.

Dill. 47. 34.

Slender, one inch high, branches two or three, sometimes more. Leaves dark green, hairy, sharp-pointed. Fruit-stalks short, when young terminating. Veil brownish. Capsules short, roundish. DILL. In moist situations the capsules are rather longer, and sometimes the fruit-stalks are bent like those of *Br. fragile*. Mr. GRIFFITH.

Snowdon, and Mountains about Llanberris. DILL. On Ben Lomond, and sides of Highland Mountains. LIGHTFOOT. [Crib y Ddeseil, Mr. GRIFFITH.]

Aug.—May. DILL.—Oct.—June. LIGHTFOOT.

latera'le. B. Capsules nearly globular, lateral; leaves bristle-shaped, pointing one way. LIGHTFOOT.

Hedw. stirp. ii. 40—E. bot. 997—Hall. enum. 3. 8. at p. 109, hist. 46. 8, at iii. p. 56—Hall. it. helv. ii. 1. 2. in opusc. p. 300—Fl. dan. 823. 1; and 538. 3.

Stems forming tufts, from one to three inches high; almost upright, purplish, but little branched; covered at the base with fox-coloured wool. Leaves numerous, very green, bristle-shaped, soft, long. Fruit-stalks upright, short, purple. Veil conical, sharp, pale, deciduous. Capsules fringed, tawny. Lid conical, very short, tawny. HUDSON. Male and female flowers in the same involucre. Fruit-stalks short, stiff, but bending by the weight of the capsule, fixed to the end of the last year's shoot, but the growth of the new shoot makes it appear lateral. Outer fringe of sixteen teeth. In the *B. pomiforme*, the leaves are more equally tapering, and the fruit-stalks are longer.

Lateral Bryum. *Bartramia Halleriana*, HEDWIG and E. bot. [On the banks of the river Isla, Angus-shire, Mr. BROWN; who assures me that it was first discovered in Scotland by Dr. WALKER



on Hartfell mountain near Moffat. Boggy ground on the ascent to Crib y Ddeseil, from Llanberris. About Llyn Idwell, in the ascent to Twll dŷ, in great abundance. June. Mr. GRIFFITH.]  
P. May—Sept.

B. Capsules on fruit-stalks, UPRIGHT.

(4) *Stems upright.*

b. Capsules egg-shaped.

B. Capsules egg-oblong; lid taper-pointed; veil reaching cirrhatum, but half way; shoots branched; leaves strap-spear-shaped, mid-ribbed, acute.

Vaill. 24. 8-Fl. dan. 538. 4.

Grows in large dense patches. *Fruit-stalks* from one half to one inch, the young ones terminating, the older from the forks of the branches. *Lid* reddish, pointed, very slender, readily falling off. *Mouth* with a short fringe. WEIS.

*Mnium cirrhatum*. Bot. Arr. ed. ii. and Gmelin doubts whether it ought not still to be considered as a *Mnium*, arranging with the *Dicranums* of Hedwig. Mr. Griffith thinks this is not distinct from the *Br. viridulum*, and observes that the *Br. viridulum* at the foot of the hill gradually changed in the course of the ascent until it became *Br. cirrhatum*. Woods, mountainous heaths, walls, and hedge banks. P. March—July.

B. Capsules egg-oblong, toothed; shoots nearly upright; lanceolat-tum.  
leaves spear-shaped, concave, taper-pointed.

Hedw. stirp. ii. 23.

*Stem* upright, three or four lines high, rarely branched. *Leaves*, the lower ones smaller than those above. *Lid*, beak generally bent. *Veil* pale green to whitish, upright, splitting at the side.

*Leersia lanceolata*. HEDWIG. Dry heaths. Hedge banks about Croydon. Spring and Autumn. P.

B. Capsules cylindrical, bearded; leaves distant, spear-linoides-shaped, roundish but pointed. DICKS.

Dicks. iii. 8. 3.

*Shoot* upright, simple. *Leaves* expanding, pointed by the projecting of the mid-rib. *Fringe* twisted. *Veil* awl-shaped, twice the length of the capsule.



Pastures in Scotland, DICKSON.

polyphyl-  
lum.

B. Capsules egg-oblong, toothed; shoots very much branched; leaves crowded, spear-shaped; curled when dry.

*Hedw. stirp.* ii. 31—*E. bot.* 1217—*Dill.* 48. 41.

(*Veil* striated, at length torn at the edge. *Lid* awl-shaped. *E.*) Resembles the *Br. cirrhatum* so much that they are not to be distinguished without maceration. That however is a more slender plant, has fewer fruit-stalks, and the capsules are pater. *DILL.* *Br. cirrhatum* β. HUDS. *Mn. cirrhatum.* Bot. Arr. ed. ii. *Fissidens polycarpus.* HEDW. *Hypn. polycarpon.* GMBLIN, Syst. veg. On Snowdon. [About Llanberis. Mr. GRIFFITH.] (At Hafod, Cardiganshire. Dr. SMITH. *E. bot.* E.) Autumn.

Ray mentions a var. with much smaller leaves, it is the *Br. cirrhatum* γ. HYPN.

canes'cens.

B. Capsules egg-oblong; leaves crowded, spear-shaped, bent back, white haired at the ends.

*Hedw. stirp.* iii. 3—*Vaill.* 26. 14—*Dill.* 47. 27. *D. E. F.*

*Stem* upright when young, afterwards declining, and sending out a few branches of various lengths. *Leaves* spear-shaped, keeled, pressed to when dry. *Fruit-stalk* straight, three-fourths of an inch in height. *Capsule* oblong-egg-shaped. *Lid* a slender cone. *Mouth* fringed with sixteen long, hair-like teeth, divided down to the base. *Veil* slender, long, ragged at the bottom. *Fruit-stalks* lateral. HEDWIG.

*Bryum hypnoides* β. Fl. Suec. *Trichostomum canescens.* HEDWIG. stirp. iii. p. 5. Differs from the *B. hypnoides* in its upright stem, its leaves being very slightly serrated only at the ends, and in its longer fruit-stalk. HEDWIG.—When moist and growing, yellowish green, when dry woolly, from the number of hairs which terminate the leaves. *DILL.*

Common in dry, high, barren, sandy places. Blackheath, Woolwich, Hampstead, Enfield Chase, and Dartford Heath. *DILL.* Feb.—March. P.

Var. 2. Shoots simple, or but little branched,

*Dill.* 47. 27. *A. B. C.*

About an inch and half high. *Fruit-stalk* lateral. *Capsules* upright, egg-cylindrical. *Leaves* spear-shaped; slender, keeled, hair-pointed; hairs grey and bent inwards when dry.

Specimen from Mr. Griffith, accompanied by others of a stunted growth, on bleak rocks, not half an inch high, and very much crowded with leaves.

Var. 3. Leaves spear-awl-shaped, mid-ribbed; shoots branched.

*Dill.* 47. 29.

This was considered by Mr. Hudson as a variety of the *hypnoides*, but though the shortness of the fruit-stalks favours that opinion, the leaves being equally distributed, not bundled; and the want of trailing shoots, induce me for the present to place it here, not however without a disposition to believe that it is a distinct species.

*B. hypnoides* γ. HUDS. On some stones forming a circular wall upon the summit of Snowdon. August.

*B.* Capsules egg-cylindrical, with a fringed ring; leaves ericetorum. strap-spear-shaped, twisted when dry. DICKS. ii. 5.

*Dill.* 45. 13.

Leaves pellucid, not hair-pointed, keeled, standing out, dull green. Capsules slender, nearly cylindrical. Fruit-stalks pale brown, half an inch long. Veil and lid deciduous. DILL. Shoots terminated by stars.

Turfy heaths, Scotland.

*B.* Capsules urn-shaped; fruit-stalks axillary; leaves spear-awl-shaped, without a mid-rib, doubled together. aestivum.

*Dill.* 47. 36.

This Moss adheres together when dry, as it doubtless does when wet, like a *Cerferva*; and when dry preserves its beautiful blue green colour. It consists of thread-like shoots crowded with very slender leaves, but dipped in water so that the shoots may separate, they appear but little branched and the leaves seem less numerous. DILL. In some specimens now before me the fine bluish green colour like that of a *Cantharid* is very striking. Capsules urn-shaped. Fruit-stalks about half an inch long. Plant one inch and a half high. Leaves not crowded, spear-shaped, but very slender without a mid-rib, doubled together.

*B. æstivum* of HUDSON is *B. capillaceum*, excluding the synonym of DILL. 47. 39, which is *B. brevifolium*, Marshy. places. RICHARDSON, in *Dill.* 375.

Dickso'ni. B. Capsules egg-oblong, fringed; shoots branched; leaves strap-shaped, keeled, rather curled when dry. DICKS.

*Dicks. 7. 7.*

Shoots branched, branches expanding, nearly of one height. Leaves upright, scattered, strap-shaped, keeled, dark green, those at the end forming a star; curled when dry. Capsules yellowish. Mouth red, ring slender, teeth short, upright, red. Lid with a long slanting beak. Veil slender. DICKSON. Leaves very slender, strap-spear-shaped, with a mid-rib the whole length. Fruit-stalk hardly half an inch high.

On rotten wood and decayed trunks of trees. [On a moist rock by the petrifying spring in Garn Dingle near Denbigh. Wet rocks of Crib y Ddeseil. Mr. GRIFFITH.]

trifa'rium. B. Capsules egg-oblong; mouth bearded; shoots seldom branched; leaves spear-awl-shaped, expanding. DICKS.

*Hedw. stirp. ii. 28.*

Scarcely half an inch high, unbranched, upright. Lower leaves smaller, colourless; upper ones larger, broad at the base and keeled, awl-shaped at the end, pointing three ways. *Swartzia trifaria*. HEDWIG. Capsule egg-cylindrical. Lid conical, bent.

Barren hills. DICKSON.

crispum. B. Capsules egg-shaped; fruit-stalks thicker at the top; leaves strap-shaped, broadest at the base, crowded, curled when dry.

*Hedw. stirp. ii. 35-E. bot. 996-Dill. 55. 11-Pet. mus. f. 25-Vaill. 27. 9.*

In dense tufts, so close, that the under parts decay. About one inch high, branched. Barren flowers in the bosom of the



leaves! *Sheath* scarlet. *Fruit-stalks* terminating, short, straightish, thickening at the top so as to coincide with the pear-shaped capsule. *Capsule* from the above circumstance appearing pear-shaped, but it is really globular egg-shaped. *Lid* with a straight short beak. *Ring* none. *Fringe* double, 16 teeth in each. *Veil* pyramidal, hairy. HEDWIG. *Capsule* when old with eight longitudinal streaks, in each of which lies concealed a pair of teeth belonging to the outer fringe after it has been bent back. When the seed has escaped, it contracts in the middle part. Inner fringe eight white hairs, the points of which unite in the centre. Outer fringe eight teeth, each of which at length splits into two. This discovery may help to account for the variable number of teeth assigned to the different species of Splachnums. Mr. GRIFFITH.

*Bryum striatum* δ. LINN. Syst. pl.

*Curled Bryum.* *Orthotrichum crispum.* HEDW. and Fl. Brit. Trunks of trees. Woods near Southgate in Middlesex. [Not common. Near Bungay, Suffolk. Mr. STONE.] Flowers in Spring. Capsules ripen in May or June. P.

B. Capsules egg-shaped, toothed; shoots rather serpentine; vagina'le. leaves hair-like but sheathing at the base. DICKS.

*Hedw. stirp. ii. 33-E. bot. 1151.*

Near half an inch high, rather waved, upright. *Leaves* serpentine, mostly pointing one way. *Beak* slender, straight. *Dicranum crispum.* HEDWIG. (*Fringe* red, of sixteen cloven flat teeth. *E. bot. E.*) *Capsules* urn-shaped.

*Curled Fork-moss.* *Dicranum crispum.* *E. bot.* Bogs in Scotland. DICKSON. (Said to have been found also by JOHN TEMPLETON, Esq. of Orange Grove near Belfast, on moist banks of the Maryburn River, Ireland. *E. bot. E.*) P.

B. Capsules egg-oblong, with a ring, fringed: leaves pointing one way, strap-awl-shaped, stiff. DICKS. Weis'i.

*Hedw. stirp. 1. 8.*

*Stem* upright. *Leaves* awl-shaped, but broad and sheathing at the base, rigid, not curling up when dry. *Involucrum* sheathing. *Fruit-stalk* terminating, always longer than the stem, nearly upright. *Veil* slender, upright. *Lid* a blunt cone. *Fringe* single, of sixteen teeth.



*Weisia heteromalla*. HEDWIG. Woods and sandy places.

May—June.

splachnoi-  
des.

B. Capsules, inversely-egg-shaped, toothed: receptacle roundish: leaves strap-bristle-shaped. DICKS. ii. 5.

*Fl. dan.* 538. 2.

Leaves numerous, upright, open, some bowed back. Receptacle small, hunched, beneath the capsule. DICKS.

On rocks on Ben Nevis, Scotland.

hyperbo-  
reum.

B. Capsules egg-shaped, fruit-stalks short: leaves stiff, hair-like, crowded. GUNNER.

*Fl. dan.* 538. 1.

Full half an inch high. Capsules but little raised above the foliage. Beak conical, slanting.

Rocks on Ben Nevis. DICKSON.

fascicula-  
tum.

B. Capsules egg-shaped, mouth naked: shoots branched: leaves hair-like, rather bent outwards, in distinct bundles. DICKS.

*Hedw. stirp.* ii. 24.

Grows in dense tufts. Beak of the lid crooked. Veil small, splitting at the side. Fringe none. HEDWIG. From half to one inch and a half high; repeatedly branched.

*Gymnostomum curvirostrum*. HEDWIG. On rocks on Highland mountains, Scotland. DICKSON.

B. Capsules on fruit-stalks, UPRIGHT.

(4) Stems upright.

c. Capsules oblong.

tenue.

B. Capsules cylindrical, bearded: shoots upright: leaves spear-shaped, alternate. DICKS.

Dill. 48. 49.

9001-76M

At first slender and not branched, fruit-stalks terminating; when older becoming branched, and fruit-stalks from the forks of the branches; reddish, short, slender. *Leaves* few, narrow. DILL. *B. purpureum* β. HUBS. *M. purpur.* β. Bot. arr. ed. ii. Different from the *B. purpureum* DICKSON.

Heaths; loose sandy and gravelly soil.

March.

B. Capsules oblong, slender: beak bent: leaves spear-shaped, tiled, expanding. recurvirostrum.

Hedw. stirp. i. 7-Dill. 48. 45.

*Stem* upright, not branched, about half an inch high. *Fruit-stalk* upright, generally terminating the old stem. *Veil* long, conical, crooked. *Lid* convex, beak straight whilst under the veil, afterwards crooked, but in a direction opposite to the bend of the veil. HEDWIG. *Stem* sometimes branched. (See fig. Dill.) *Leaves* very slender, keeled, upper ones the longest. *Fruit-stalks* red, half an inch high, or better. *Capsules* and *lid* red. DILL.

*Weisia recurvirostru.* HEDWIG. *Bryum curvirostrum.* DICKS. and Bot. arr. ed. ii. Woods in dryish places. Sandy stony places, interwoven with the grass. P. Aug.

B. Capsules oblong, slender: lid taper-pointed, slanting: barbatum. fruit-stalks lateral: leaves spear-shaped, acute, the upper ones expanding.

Curt. 274-Dill. 48. 48.

Grows in tufts, half an inch high, somewhat branched. *Leaves* spear-shaped, pointed. *Fruit-stalks* half an inch or more from the base or the middle of the branch, but never terminating. *Capsules* slender. *Veil* long. *Lid* long, slender, conical. *Fringe* orange-coloured or scarlet, twisted like a screw. CURTIS. (The 45th pl. of Dill. is referred to by mistake in the observations of Mr. Curtis.) *Branches* of equal thickness, sent off from the lower part of the plant. DILL.

On walls.

P. Dec.—Feb.

B. Capsules oblong: beak slanting: leaves slender, spear-shaped, keeled, bent outwards. imberbe.

*Dill.* 48. 46. *green half yellow when pale*  
*Fruit-stalks* upright, solitary, terminating and lateral, half an inch long. *Capsules* cylindrical, one line long, deep saffron coloured, blackish at the base. WEBER. *Fringe* long. HALLER. Not an inch high, upright, unbranched at first, but every year sending out branches after the flowering season. *Leaves* broad at the base, and keeled. *Barren flower* terminating. HEDWIG. Grows in dense tufts. *Stems* slender, half to one inch high, dividing into branches. *Leaves* very slender, pale green, upper leaves bent back. DILL.

Sandy heaths, ditch banks, and walls. [Bungay, Suffolk. Mr. STONE. By the rivulet in Garn Dingle. Mr. GRIFFITH.] Winter. DILL. A. March—April. HUDS.

unguiculatum.

B. *Capsules* oblong; lid taper-pointed, slanting; leaves strap-spear-shaped, keeled. HUDS.

*Dicks. h. s.—Dill.* 48. 47—*Burb.* ii. 2. 9.

*Shoots* forming patches about half an inch high; sometimes branched. *Leaves* open, near a line in length and a quarter in breadth. *Fruit-stalks* terminating. *Veil* smooth, reaching but half way down the capsule. POLLICH. *Leaves* green, keeled, opaque. *Capsules* oblong, thickest at the base, green, changing to brown. DILL.

Walls and sandy places. [Bungay, Suffolk. Mr. STONE.] Clay walls. HEDWIG. A. March—April.

tortuosum. B. *Capsules* cylindrical; lid beaked; shoots branched; leaves spear-strap-shaped, serrated, waved, curled when dry.

*Dill.* 48. 40—*Hall. enum.* 4. 2, at p. 118, *hist.* 45. 2, at ii. p. 41—*Fl. dan.* 880. 1—*Scheuch. it.* ii. 19. 5—*Pet. gaz.* 65. 8.

Grows in dense crisp patches. *Shoots* upright, adhering together. *Leaves* a line or one and a half line long. *Fruit-stalks* from the forks of the branches, straight, three to seven lines long, closely clasped at the base by the involucre. *Capsules* cylindrical, smooth. *Ring* none. *Mouth* fringed. *Lid* awl-shaped, straight. *Veil* smooth, extending but half way down. POLLICH. One to one and a half inch high, somewhat branched. *Leaves* very numerous, slender, crooked, curled when dry, fine

green, dull yellow when old. *Veil* slender, pale green, changing to brown. *Capsules* nut-coloured when ripe. DILL.

Heaths, rocks on mountains, and woods. [On a bushy hill, half a mile from Garn, called Coed Mowr. Mr. GRIFFITH.]

P. Aug.—Nov.

B. *Capsules* cylindrical, fringed; shoots mostly sim- flaves'cens.  
ple; leaves spear-strap-shaped, keeled. DICKS.

ii. 4.

*Dicks.* 4. 5. a. b—*Scop.* 62. 1305. at ii. p. 321.

*Shoots* nearly upright. *Leaves* between upright and open, yellowish, the points when dry twisted. DICKSON. Grows in broad patches. *Leaves* two lines long, one third of a line broad. *Fruit-stalks* one inch long, saffron-coloured. *Capsule* slender, long. *Veil* red at the top, near two lines long; *Scop.*

Bogs in the Highlands.

B. *Capsules* oblong, tapering, imperfectly fringed; leaves brevifo'lium.  
crowded, strap-shaped, keeled. DICKS. ii. 4.

*Dill.* 47. 39.

Slender, but little branched. *Leaves* dark green, very narrow and short. *Fruit-stalks* terminating the new shoots, short. *Capsules* oblong, small, dark brown. DILL.

Bogs in Yorkshire and in Scotland.

B. *Capsules* cylindrical, toothed; shoots branched, waved; flagellare.  
leaves awl-shaped, channelled, pointing one way.

DICKS.

*Hedw. stirp.* iii. 4.

*Fruit-stalk* very slender. *Capsule* cylindrical, upright. *Lid* long, awl-shaped, bent. *Veil* splitting at the side, whitish, deciduous.

*Dicranum flagellare.* HEDWIG. On Ben Nevis, Scotland.  
DICKSON. P.

B. *Capsules* oblong: leaves in two rows, bristle-shaped, capilla'-  
somewhat sheathing at the base. ceum.



Hedw. stirp. ii. 26—E. bot. 1152—Fl. dan. 1000. 1—Dicks. 1.  
6—Hall. enum. 4. 1, at p. 118. hist. 35. 1, at m. p. 41.

**Capsules** oblong. **Leaves** expanding, bristle-shaped. HUDSON. Differs from *B. heteromallum* in its open leaves, and the shape of its capsules; and from *B. flexuosum* in its fruit-stalks slender, quite straight, and not zig-zag, and in the smallness of its capsules. DICKSON. **Stem** undivided, upright, half an inch high. **Leaves** in two rows, alternate. Barren and fertile flowers together, terminating. **Fruit-stalks** half an inch to one inch long. **Veil** opening at the side. **Capsules** cylindrical. **Lid** short, conical. **Mouth**, fringe single, teeth in pairs. HEDWIG. **Stalks** compressed, jointed. Mr. GRIFFITH.

**Fine-leaved Fringe Moss.** *Swartzia capillacea*. HEDW. *B. testium*. HUDS. 485, but not Dill. 47. 35. *Trichostemum capillaceum*. E. bot. On rocks and moist mountainous situations. On Ingleborough, plentifully. HUDSON. About Llanberis. Mr. DAVIES. Marshy places in mountainous situations. DICKSON. [Bogs, in the ascent to Crib y Ddeseil. Mr. GRIFFITH. Spinks Grove, Brome near Bungay. Mr. STONE.]

Var. 2. **Leaves** more crowded, shorter, roughish: capsules much smaller.

Not above half the height of the preceding. It assumes this habit when growing on rocks, or in dry situations, but still it preserves the jointed stalk, which is an unerring criterion of this species. Mr. GRIFFITH; but which seems to have escaped the notice of Hedwig. Maceration in water renders these joints visible in a dried plant.

[On the rocks above Cwm Ffynnon selen, near Llanberis abundantly. Mr. GRIFFITH.] P. April—June.

### C. Capsules on fruit-stalks, LEANING.

(1) **Stems** none, or very short and unbranched.

subula'tum. *B. Capsules* cylindrical; lid conical, acute; shoot very short, unbranched; leaves egg-shaped, bluntish.

Curt. 214—E. bot. 1101—Fl. dan. 1000. 2—Vaill. 25. 8—Dill. 45. 10—Burb. 1. 63. 2; ii. 203 and 4.

Grows crowded together; but little branched, terminating in roses. **Capsules** cylindrical, slender, three or four lines long.

becoming crooked when dry, ripe in summer. *Leaves* pellucid, pale green, with or without hairs. *Weirs and Drill.* *Plant* from three to five lines high. *Fruit-stalks* sometimes in pairs. *Veil* permanent. *Scop.* nearly as long as the capsule. *Fruit-stalks* terminating, from half to one inch long. *Capsule* lid very long; the teeth twisted together when old into an oblong shape with a brush-like point. *Leaves* with a strong mid-rib, ending in a longish grey hair which falls off when the leaf is old. *Awl-shaped Bryum.* *Tortula subulata*. E. bot. Moist banks, woods, roofs, and walls. P. Jan.—May.

**B.** Capsule long and tapering at the base; shoot upright; elongatum, leaves strap-spear-shaped.

*Hedw. stirp.* 36.

Hardly half an inch high, upright. Barren and fertile flowers terminating, but on different plants. *Fruit-stalk* straight, upright, but a little bent at the top by the weight of the capsule. *Capsule* oblong, leaning, its lower part a cellular substance, not containing seeds. *Lid* convex, beak short. *Mouth* with a double fringe, sixteen teeth in each.

**B.** *Pohlia elongata*. *HEDW.* Woods near Loch Ness, Scotland. [On Ben Lawers along with *B. Zierii* Mr. BROWN.]

May—Aug.

**B.** Capsules a little leaning, toothed; shoots upright, short; parvulum. leaves hair-like, upright, rigid. *Dicks.*

*Hedw. stirp.* ii. 29. B.

Grows in patches. Scarcely a line in height. *Leaves* concave and dilated at the base, fine green, without a mid-rib. *Fruit-stalk* yellow green. *Capsule* egg-shaped. *Beak* long, slanting, reddish at the base.

*Dicranum pusillum*. *HEDW.* Pastures in Scotland. *DICKSON.* Aug. P.

### C. Capsules on fruit-stalks, LEANING.

(2) *Stems* upright.

strumiferum.

B. Capsules nearly upright, pear-shaped, toothed; receptacle crooked; leaves strap-spear-shaped, mostly pointing one way.

*Hedw. stirp.* ii. 32.

Capsules scored at the mouth, pear-shaped, but crooked, with an irregular knob at the base. Beak bent, fine red at the base.

*Fissidens strumifer*. HEDW. *Hypn. strumosum*. Gmel. syst. veg. Boggy meadows in Scotland. DICKSON.

fallax.

B. Capsules oblong, mouth bearded; shoots somewhat branched; leaves strap-spear-shaped, expanding, bent outwards. DICKS.

*Hedw. stirp.* 1. 24.

Different from the *B. imberbe*, which has the leaves strap-awl-shaped and straight, and the beak of the lid conical. *Barbula fallax*. HEDW. but not his synonyms. DICKSON. Full half an inch high. Leaves curled when dry. Lid slender, nearly cylindrical, not quite straight.

In Scotland, and in Yorkshire.

crispatum. B. Capsules fringed, shoots branched; leaves strap-shaped, channelled, curled.

*Dicks.* 7. 4.

The size of *B. virens*. Shoots upright. Leaves upright, twisted, curled, a little toothed. Calyx slightly contracted in the middle, scored when dry. DICKSON. Capsules fringed; fringe very long for the size of the plant. Lid depressed; beak long, slanting. Leaves pellucid, decurrent. Mr. GRIFFITH.

Bogs in Scotland. [On the rocks of Crib y Ddeseil, Cwn Idwel, and Clogwyn y Garregog, near Llanberis. Mr. GRIFFITH.]

longifolium. B. Capsules oblong, toothed; shoots elongated, rather leaning, sometimes branched; leaves hair-like, pointing one way. DICKS.



*Hedw. stirp.* iii. 9.

An inch high or more, growing shoot upon shoot; delicate, feeble, but upright. *Leaves* sheathing at the base, very long and slender upwards, rather bent back and pointing one way. *Capsules* oblong, rather swollen on one side. *Lid* awl-shaped, slanting, reddish. *Veil* delicate, pale.

*Dicranum longifolium.* HEDW. Banks of rivulets in the Highlands of Scotland. DICKSON. P.

B. Capsules oblong, slender; fruit-stalks twisted; leaves flexuous, bristle-shaped.

*Dicks. h. s.*—Dill. 47. 33. A. B. C. D. E.

From an inch and a half to three inches high. *Leaves* strap-awl-shaped; in bundles. *Fruit-stalk* twisted like a cork-screw. *Capsules* upright. *Lid* conical, pale red. This larger growing plant seldom bears fruit, and when dry assumes a darker colour than the following variety, but I see no reason for believing them distinct species.

Ireland. Rocks about Llanberris. DILL.

P. April—June.

Var. 2. Smaller and shorter.

Dill. 47. 33. F. G.

About an inch high, but little branched, slender, thicker upwards. *Leaves* hair-like, yellow green. *Fruit-stalks* green, turning, yellowish, variously bent and twisted. *Capsules* oblong, slender. *Lid* pointed, red. *Veil* whitish. Sometimes two or three fruit-stalks arise from one branch. DILL. From half to one inch high. *B. fragile.* DICKSON. I see no reason for making it distinct from *B. flexuosum*, with which it agrees in habit, in the shape of its leaves, and in its waved fruit-stalks. I have not observed it particularly brittle in its dried state. Mr. GRIFFITH.

[About Llyn Aled, Denbighshire. Mr. GRIFFITH.]

Var. 3. Very tall, not bearing capsules.

Dill. 32. 3.

[Cwm Idwell, near Tŵll dŵ, Caernarvonshire. Mr. GRIFFITH.] *Sphagnum alpinum.* LINN.



In the autumn of 1788, some plants of the *Sphagnum alpinum* which I brought from Snowdon were placed in a shady corner under a water spout; the result was a conviction that the *Sphagnum alpinum* is only a variety of the *B. flexuosum*. Its luxuriant growth in bogs accounts for its want of capsules. Thus the *Polytrich commune*, on the quaking bogs of Delamere Forest, often grows to the length of three quarters of a yard, but in that state it never bears fruit. Mr. GRIFFITH.

Obs. When the *B. flexuosum* is moist, the capsules lie concealed amongst the leaves by a singular hygrometric quality in the fruit-stalk; but as the moisture exhales, they become nearly upright by several spiral revolutions from the right to the left. In *M. heteromallum* the revolutions of the fruit-stalk are from the left to the right. Mr. GRIFFITH.

tetrago'num. B. Capsules nearly upright, somewhat globular; shoots 4-cornered, the younger tendril-like; leaves pressed to, strap-awl-shaped. Dicks. ii. 8.

Dicks. 4. 9. a. b.—E. bot. 1135.

Full grown shoots upright, with leaves disposed in four rows, blackish, yellowish green above, sometimes sending out young shoots from the ends; young shoots zig-zag like a climbing plant, reddish. Leaves of the full grown shoots very closely tiled, pressed to, upright, strap-shaped, awl-shaped towards the ends; those of the young shoots minute, egg-shaped, few. Capsules upright, somewhat oblique, mouth contracted. Fringe with a ring. DICKSON. The fringe is without doubt simple. The young slender zig-zag shoots figured and so minutely described by Mr. Dickson are only produced when the plant is placed in a moist and somewhat warm situation, almost entirely secluded from light and air, neither are they peculiar to this species, for I have produced them in *Mnium purpureum* &c. &c. merely by placing it in such situations as I have described: in all cases where these are produced, I have further remarked that they invariably point in that direction from whence the very small portion of light or air entered, as to the hinge of the botanical box, when the experiment was made in it. Mr. BROWN.

*Grimmia conostoma*. E. bot. Ben Lomond, Scotland. [Also on Malghyrdy Benteskerney, Ben Lawers, Lochain y Gar, and in great abundance on Craig Cailleach; on the bare ground; never found but at alpine heights. Mr. BROWN.]

P. July—Oct.

- B. Capsules egg-shaped, lopped, toothed; shoots branch-  
ed; leaves crowded, strap-shaped, curled when dry,  
DICKS.

*Dicks.* 7: 6.—*E. bot.* 1281.

*Shoots* nearly upright, branched, crowded with leaves.  
*Leaves* brown yellow when dry. *Fruit-stalk* terminating, short.  
*Capsule* brown yellow. *Fringe*, teeth short, bent inwards. *Lid*  
with a slender crooked beak. *Veil* distended, ragged at the  
bottom. DICKSON.

*Least Extinguisher Moss.* Discovered by Mr. Davies on the  
mountains of Wales. (Rocks at Fairhead, and on the fallen  
columns of the Giants' Causeway. Mr. BROWN. E.)

- B. Capsules egg-shaped, leaning; leaves hair-like, spread-inclina'tum.  
ing, sheathing. DICKS.

*Hedw. stirp.* ii. 27.

About one inch high, unbranched, upright. *Leaves* al-  
ternate, pointing two ways.

*Swartzia inclinata.* HEDW. Turf bogs in Scotland, DICK-  
SON. [And North of Ireland, not uncommon. Mr. BROWN.]

P. June—Aug.

- B. Capsules egg-oblong, somewhat slanting, finely tooth- biparti'tum.  
ed; shoots cloven; leaves spear-shaped, acute, keel-  
ed, tiled, open. DICKS. ii. 7.

*Dill.* 49. 50.

*Branches* and *fruit-stalks* in pairs. *Capsules* oblong, brown-  
ish. *Lid* short. *Veil* slender, pointed. *Leaves* narrow, keel-  
ed, dark green. DILL.

Hedges in gardens, walls and ditch banks, common.

Feb.—March.

- B. Capsules cylindrical; lids conical, acute; shoot branch- rura'le.  
ed; leaves reflected, inversely egg-shaped, blunt,  
hair-pointed.

*Hedw. hist.* i. 6. 28. to 32—*Dill.* 45. 12—*Vaill.* 25. 3—*H. or.* xv. 6, row 3. 1, and row 4. 2—*Buxb.* v. 44. 1.

Branched, one or two inches high, stellated at the ends. *Leaves* numerous, broad-spear-shaped, pointed. *Fruit-stalks* an inch high, surrounded by an involucre at the base. *Capsules* cylindrical; mouth with a long fringe. *Lid* a long cone. *WEIS.* Grows in dense and elevated tufts. *Stems* upright, branched, one to two inches high. *Leaves* crowded, standing open, fine yellowish green when wet, but dull greyish and brownish in dry seasons. *DILL.*

Roots both thatched and tiled, walls and trunks of trees.

P. Dec.—April.

androgy-  
num.

B. Capsules cylindrical; lids taper-pointed; fruit-stalks terminating; shoot branched, upright; leaves spear-shaped, rather expanding.

*Schmid.* 56. 1—*Fl. dan.* 229—*E. bot.* 1238—*Happ.* ii. *Mnium* 5—*Dill.* 31. 1—*Vaill.* 29. 6—*Mich.* 59. 8. *H. K. e.*—*Neck meth.* 1. 4—*H. or.* xv. 7, row 2. 20.

Grows in dense patches; better than half an inch high. *Involucrum* none. *POLLICH.* *Barren flowers* terminating, globular, on fruit-stalks only half the length of those bearing capsules. From one half to near two inches high, generally branched, nearly upright. *Leaves* not crowded, short, very narrow, pale green, pointed. *DILL.*

*Narrow-leaved Spring-moss.* *Mnium Androgynum.* *LINN.* Woods, heaths, and walls. Roots of trees in moist sandy woods, dry shady banks by the sides of heaths. *Crib y Ddeseil.* Mr *GRIFFITH.*

A. March—April

undulatum. B. Capsules nearly upright; oblong; fruit-stalks mostly solitary; leaves spear-shaped; keeled; waved; expanding; serrated.

*Dicks. h. s.*—*Curt.*—*Hedw. stirp.* 1. 16—*E. bot.* 1220—*Dill.* 46 18—*Vaill.* 26. 17—*H. or.* xv. 7, row, 1st, 9.

\* When this takes to grow upon thatched buildings so as to cover the thatch, instead of lasting but about ten years it will endure for an age. *LINN.*

*Stem* one to three inches, upright, unbranched. *Leaves*, the upper ones largest, viz. two or three lines long, and one broad. *Fruit-stalks* terminating, upright, one to two inches high; sometimes two together. *Capsules* oblong, leaning, bent. *Lid* sharp-pointed, marked with a scarlet circle. WEIS. *Sheathing* involucre pyramidal, its top closely embracing the fruit-stalk. *Veil* cylindrical, splitting on one side. *Capsules* cylindrical. *Lid* convex; beak very long. *Fringe* of thirty two teeth; single. HEDWIG. *Stem* in part buried in the ground. *Leaves* deep green, thin, pellucid, very finely serrated, soon curling up when the plant is gathered. DILL. *Leaves* strongly mid-ribbed, serrated and waved at the edge. It has much of the habit of a *Polytrichum*.

*Wavy-leaved Hair-moss. Polytrichum undulatum.* HEDW. Shady banks, woods about the roots of trees, and heaths.

P. Feb.—Aug.

B. Capsules nearly upright, oblong, fringed; shoots upright, unbranched; leaves strap-spear-shaped, tiled, but expanding. DICKS.

*Dicks. iii. 8. 2.*

In crowded patches. *Leaves* green, yellow. *Fruit-stalk* terminating, much thicker upwards. *Capsules* brown. *Fringe* long, red. *Beak* slanting, blunt.

Wet sandy banks in the South of Scotland. DICKSON.

D. Capsules on fruit-stalks, DROOPING.

(1) *Stem* none, or very short and unbranched.

B. Capsules somewhat globular; leaves alternate, acute. car'neum.

*Hedw. stirp. 1. 20—E. bot. 360—Dill. 50. 69—Burb. ii. 2. 5, and 6—Hall. enum. 4. 6. at p. 118. hist. 45. 6, at iii. p. 41.*

*Shoots* upright, single, or in tufts, dividing into several branches four or five lines long. *Leaves* half or one line long, half a line broad, not hairy at the end, very entire. *Fruit-stalks* terminating the shoots and the branches, three or four lines long. *Capsules* roundish, egg-shaped. *Ring* none. *Lid*



## CRYPTOGAMIA. MUSCI. Bryum. (D. 1.)

short, bluntish. *Veil* smooth, reaching but half way down. POLLICH.

*Bryum delicatulum*. HEDW. Moist watery places and pastures. [Wet drains near the bath, Ditchingham, Norfolk. Mr. STONE.] Summer. DILL.—March—April. HUDS.

Var. 2. Capsules green. Branches and fruit-stalks longer. *R. Syn.* p. 102. n. 52.

Dill. 50. 69. G.

Yorkshire. Mr. RICHARDSON,

*recurvatum*. B. Capsules roundish; leaves bristle-shaped. DICKS. ii. 7.

*Hedw. stirp.* 1. 38—*Jacq. Misc.* ii. 12.

Original stem hardly half a line in height; very brittle when dry. *Leaves* expanding, lower ones spear-shaped. *Barren* flowers in the bosom of the leaves. *Fruit-stalks* terminating, at first straight, then arching downwards, becoming straighter again when old and dry. *Capsule* pear-shaped. *Lid* convex, beak slender, crooked. *Fringe* single, with sixteen teeth. *Veil* splitting at the side, bent like the beak of the lid.

*Grimmia recurvata*. HEDW. Barren grassy places. Calcareous rocks. Spring—Autumn.

*mnioides*. B. Capsules pear-shaped; lid conical; shoot but little branched; leaves strap-shaped.

*E. bot.* 389—*Dill.* 50. 60—*Hedw. stirp.* 1. 3—*Hall. enum.* 4. 7. at p. 118, *hist.* 45. 7. at iii. p. 41.

In this and in the *M. crudum*, the stem is half as long as the fruit-stalk. Beautifully shining. *Leaves* of a greenish golden hue. LINN. Forming a firm turf. Distinguishable by its long slender leaves. *Fruit-stalks* an inch or more in length, terminating, purple, shining, issuing from a brownish green involucre. *Stellated* shoots with longer leaves. WEIS. *Fruit-stalks* serpentine, pale red to golden yellow. *Capsules* pear-shaped, green, changing to yellow red. DILL.

*Bryum aureum*. HUDS. *Webera pyriformis*. HEDW. *Mnium pyriforme*. Bot. art. ed. ii. Rocks in Nottingham Park. [Ber-

wyn Mountain, in the road between Bala and Llangunry, and on Snowdon. Mr. Wood.]

P. March—June, [and July. Mr. Wood.]

Var. 2. Capsules egg-cylindrical.

H. or. xv. 6. f. 20.

This plant has the foliage of the *B. hypnoides*, and the capsules of the *B. sericeum*. The structure, however, of the fringe, accords with the former. It varies much in size, the shoots from half to one inch high, and the fruit-stalks from one to two inches.

Specimens from Mr. Griffith, who found it on turbaries about Llyn Aled, Denbighshire; also about Llanberris. DILLENIUS in Hist. Musc. inadvertently refers the above figure to his own 51. 72, but it is very different from that, and possibly may prove a distinct species.

B. Capsules egg-shaped; shoots cylindrical, tiled, smooth; argen'teum. leaves egg-spear-shaped, hair-pointed.

Dill. 50. 62—Cart. 166—Fl. dan. 880. 2—Vaill. 26. 3—H. or. xv. 6. row the last, 17.

Grows in patches, about half an inch high, dividing into cylindrical shoots two or three lines long. Leaves egg-spear-shaped, ending in hairs, but so pressed to the stem as hardly to be discernible to the naked eye. Fruit-stalks from the base of the shoots, near half an inch high. Capsules egg-shaped, upright when green, pendent when ripe. Lid short, blunt. Mouth fringed. Veil deciduous. WEIS. In autumn and early in winter, green, afterwards shining, silvery white, especially when dry, which circumstance alone is sufficient to distinguish it from all other mosses. DILL.

Sunny banks, walls, roofs, and rocks.

P. Oct.—Feb.

Var. 2. Shoots greener. Leaves not hairy.

Dill. 50. 63.

Pale or darker green, sometimes shining. Leaves more crowded than in (1.) not hairy. Capsule, mouth not fringed. DILL.

On the gravel walks of the Oxford Physic Garden. DILL.

Jan.—March.

Zie'rii.

B. Capsules club-shaped, long; shoots cylindrical; root-leaves expanding, longer than the stem-leaves.  
DICKS. ii. 8.

Dicks. 4. 10.—E. bot. 1021.

Shoots simple, upright, pointed, of a flesh-coloured whitish hue, green towards the end. Leaves closely tiled, pressed to, egg-shaped, pointed, ribless, transparent, the ends when dry reclining. Root-leaves surrounding the shoots, expanding, spear-strap-shaped, with a rib, taper-pointed, thrice as long as the rest. Fruit-stalk from the base of the plant, thrice as long as the shoots. Capsule depressed-pendent, when moist rather upright, on a crooked fruit-stalk, in the dry plant club-shaped, very much elongated and tapering at the base, the surface somewhat granulated. Fringe with many teeth. Lid short, pyramidal. Veil not observed. DICKSON.

Moist banks in the Highlands. Near Aberfeldy. [Crib y Ddeseil, Caernarvonshire. October. Mr. GRIFFITH.]

nutans.

B. Capsules cylindrical; lids conical, dagger-pointed; shoot simple; leaves egg-spear-shaped, closing.

Hedw. hist. i. 4. 16 to 19—E. bot. 1240—Dill. 50. 61—Hedw. stirp. 1. 40

About half an inch high. Stamens and pistils in the same flower. Fruit-stalk from one to two inches high. Capsules pendent, but after discharging their seeds upright. Lid convex, beak very short. Mouth, fringe double, each of sixteen teeth. HEDWIG. Stems short. Lower-leaves few, shrivelled, brown. Upper-leaves fine pale green. Plants without capsules, taller. DILL.

Silky pendulous Thread-moss. *Webera nutans*. HEDW. *Bryum sericeum*. HUDS. and Bot. arr. ed. 2. 3 and 4. Woolwich Heath, and Snowdon, about Llanberis, on Ingleborough, and other places in Yorkshire. [Clogwyn y Garnedd, and Crib y Ddeseil, Caernarvonshire. Mr. GRIFFITH. (Cromford Moor, near Matlock. Dr. SMITH. Apsley Wood, Bedfordshire. Rev. Dr. ABBOT. E.)

P. March—Aug.

D. Capsules on fruit-stalks, drooping.

(2) *Stems upright.*

B. Capsules egg-shaped, toothed; shoots in bundles; leaves nigritum. spear-shaped, keeled, acute. DICKS.

*Hedw. stirp. iii. 39.*

Plant black green. Fruit-stalk black red. Capsules shining, black, brittle. Lid convex, with a small point.

*Weisia nigrita.* HEDW. Boggy heaths, Scotland. DICKSON. P.

B. Capsules roundish; veils minute; shoot branched; pulvinatum. leaves oblong, mid-ribbed, hair-pointed.

*Dill. 50. 65-Happ. iii. Bryum 1-Vaill. 29. 2-Pet. gaz. 95. 15-H. ox. xv. 6, row the last, 21. p. 629.*

Grows in a tuft or round cushion. Fruit-stalks green, short, bowed down, so that the capsule presses upon the leaves. Capsule egg-shaped. Veil very thin, very short, barely covering the lid. Lid taper-pointed. LINN. fl. succ. n. 993, under *B. murale*. Fruit-stalks bending down so that the capsules are buried in the foliage; but in some stages of growth they are upright. NECK. In circular convex dense patches, about half an inch high. Leaves, the lower ones brown and without hairs. Fruit-stalks terminating, very short, at first upright, but as the capsule ripens bending down. Mouth toothed. Veil deciduous. Lid short, pointed. WEIS.

Walls and roofs; the most common of all the Mosses.

March—April.

Var. 2. Capsules shorter and rounder; plant white with hoary hairs.

Specimens sent by Mr. Griffith. The uppermost leaves ending in very white hairs, as long or longer than themselves.

B. Capsules club-shaped, oblong; shoots and fruit-stalks cubitule. bent; leaves arrow-shaped, points bordered. DICKS. ii. 9.



*Dicks. 5. 2.*

The largest of all the Bryums. Shoots somewhat branched, rather recumbent at the base. Leaves expanding, taper-pointed with a thick mid-rib and reddish edge. Fruit-stalk terminating, very long, a little above the base with an elbow-like bend, of a gold coloured reddish brown, brightly glittering. Capsule depressed and pendent, club-shaped, very long. Fringe, teeth numerous, upright. DICKSON. Stems trailing near the root, often three inches long. Fruit-stalk two to three inches long. Mr. GRIFFITH. Leaves sometimes bristle-pointed, but not always so. In the specimens of smaller growth the stems are nearly upright, and the bend at the base of the fruit-stalk is less observable.

On the moist banks in the Scotch mountains, near Aberfeldy. [On wet brows by the sides of rivulets in the neighbourhood of Snowdon, Mr. GRIFFITH; who considers this plant as not specifically distinct from the *B. alpinum*.]

alpinum.

B. Capsules egg-cylindrical; fruit-stalk axillary; shoots branched; leaves tiled, spear-shaped, mid-ribbed, pointed, keeled.

*Dill. 50. 64.*

Grows densely compacted; variously branched; branches irregular in length. Leaves very numerous, oblong, keeled, straight, acute; opaque, smooth, shining, purplish green, but in old plants dark purple below, dark red above. Barren branches taper at the end, those with fruit-stalks broader. Fruit-stalks an inch high, dark red purple, issuing from a large purple tubercle. Veil purplish. DILL. Leaves pressed to when dry. GRIFFITH. The younger ones pellucid.

On rocks covered with a thin layer of earth in the ruins of an old castle near Llanberris. DILL. [Also by the side of Llyn Ogwen, generally growing in tufts, detached from all other kinds of moss. As figured by Dill. 50. 64. C. on the small dripping rocks by Hendre dwyfan bridge near Cerig y druidion; Denbighshire. Mr. GRIFFITH.]

P. April—June.

marginatum.

B. Capsules egg-cylindrical: lid beaked: leaves egg-spear-shaped, pointed, finely toothed, bordered. DICKS. ii. 9.

*Dicks. 5. 1. 6. 6.*

*Shoots* mostly simple. *Leaves*, teeth remote, the mid-rib and edge red and thick. *Fruit-stalks* solitary. *Capsule* half egg-shaped. *Lid* conical. *Veil* awl-shaped. **DICKSON.**  
Pastures, Scotland.

**HYPNUM.** *Fruit-stalk* from a lateral tubercle, fenced with scales: *capsule* outer fringe with 16 teeth.

Male a bud, generally on a different plant.

#### SUBDIVISIONS OF THE HYPNUMS.

- A. (1) Unbranched, winged with leaves: capsules upright.
- (2) Unbranched, winged with leaves: capsules leaning.
- (3) Branched, branches winged with leaves: capsules leaning.
- (4) Branched, branches winged with leaves: capsules drooping.
- B. (1) Branches irregular: leaves irregular: capsules upright.
- (2) Branches irregular: leaves irregular: capsules leaning.
- C. (1) Shoots winged with branches: branch leaves tiling: capsules upright.
- (2) Shoots winged with branches: branch leaves tiling: capsules leaning.
- (3) Shoots winged with branches: branch leaves tiling: capsules drooping.
- D. (1) Leaves bent back: capsules upright.
- (2) Leaves bent back: capsules leaning.
- E. Plant shrub-like: branches in bundles.
- F. (1) Shoots nearly cylindrical: capsules upright.
- (2) Shoots nearly cylindrical: capsules leaning.

- (3) Shoots nearly cylindrical: capsules drooping.  
 G. (1) Shoots crowded: capsules upright.  
 (2) Shoots crowded: capsules leaning.

A. (1) *Plant unbranched, winged with leaves. Capsules upright.*

bryoides. H. Fruit-stalks terminating: capsules oblong, lid acute: leaflets spear-shaped, acute.

*Hedw. stirp. iii. 29—E. bot. 625—Dill. 34. 1—Vaill. 24. 13—Fl. dan. 473. 1—H. ox. xv. 6. row 4. 11—Buxb. i. 64. 3.*

Very small, but distinguished by its *capsules*, edged at the mouth with a deep red fringe. LINN. The smallest of the genus. *Shoots* two or three lines long. *Leaflets* seven or eight pair. *Fruit-stalks* as long, or longer than the shoots, generally solitary. *Capsules* upright, egg-shaped. WEIS. Many growing together as if from one root, but each plant has its separate rate, though sometimes two or three shoots spring from one root. *Shoots* not branched, short, reclining. *Leaves* green, not pellucid. *Capsules* small, upright, oblong, green. *Veil* very small, greenish. *Lid* scarlet. *Fruit-stalks* reddish, issuing from near the end of the shoots, and without any evident involucre. DILL. Midrib of the leaflets pellucid. MR. STACKHOUSE.

*Fissidens bryoides.* HEDW. Shady places, woods, and ditch banks. A. Feb.—May.

A. (2) *Unbranched, winged with leaves, Capsules leaning.*

denticulatum. H. Seldom branched; fruit-stalks from the base; capsules cylindrical; lid blunt; leaves wedge-shaped, acute, in pairs, 2-rowed.

*E. bot. 1260—Dill. 34. 5—H. ox. xv. 6. row 1. 36—Vaill. 29. 8.*

*Leaflets* triangularly egg-shaped, hooked. WEBBER. *Shoots* several, lying on the ground, half to one and a half inch long, seldom branched. *Leaves* in a double row on each side, soft, pellucid, shining, pale, green, pointed and bent back towards the end. *Fruit-stalks* from the base of the shoots, reddish, an inch or more in length. *Capsules* oblong, straight, covered by

the veil, which is of a straw colour: becoming bent as it approaches to maturity. *Lid* short. DILL.

Woods, and moist shady places on the ground, and on trunks of trees. P. Mar.—April.

H. Nearly upright: fruit-stalks terminating: capsules asplenioïdes. nearly cylindrical: beak bent: leaflets spear-shaped, blunt.

Dicks. h. s. and fasc. 5. 5.

Habit that of *H. adiantoides*, but smaller, and the fruit-stalk always terminating. *Leaves* tiled at the base, almost embracing the stem, spear-shaped, bluntish, somewhat keeled, the mid-rib reddish, sometimes rolled in at the ends. *Beak* slanting, white, as long as the capsule. DICKSON.

Bogs in the Highlands, near Ben Lomond.

A. (3) *Branched; winged with leaves: capsules leaning.*

H. *Leaves* oblong, blunt, hollowed on the under edge: trichomanoides. capsules nearly cylindrical: beak bent.

Dill. 34. 8.

*Leaves* convex above, the ends reflected. DILL. *Leaves* inversely egg-shaped, but somewhat hollowed on the under edge: very broad at the end, but with a minute point. *Fence* leaves spear-awl-shaped. *Capsules* nearly upright.

*Hypnum complanatum* β. HUDS. and Bot. arr. ed. ii. Ditches in woods, and roots of trees. P.

H. Plant somewhat branched: fruit-stalks from the side: adiantoides. capsules nearly cylindrical: lid conical, short: leaflets spear-shaped.

Dicks. h. s.—Hedw. stirp. iii. 26—E. bot. 264—Dill. 34. 3—Vaill. 28. 5—Burb. ii. 1. 4.

Two or three inches long, straight; leaflets 12 to 16 pair. *Fruit-stalks* one inch high. NECK. Branched from the base. *Leaves* not pointed. *Capsules* leaning. *Lid* red. *Veil* as long as capsule. SCOP. Upright, branched. *Leaves* shining. *Fruit-stalks* red, lateral. *Capsules* brownish, turning red. *Lid* scarlet,



pointed. DILL. *Leaflets* not serrated as mentioned by Leers. Mr. GRIFFITH.

*Fissidens adiantoides*. HEDW. Bogs; moist heaths. [Cryb y Ddeseil, and Clogwyn y Garnedd. Mr. GRIFFITH.]

P. Mar.—April.

*sylvaticum*. H. Plant branched, trailing: fruit-stalks from the side: leaflets acute.

Dill. 34. 6.

Shoots branched. Branches undivided, few, not shining. Fruit-stalks lateral. Lids of the capsule pointed. DILL.

Woods, at the roots of trees. [Rivelston Wood near Edinburgh. Dr. J. E. SMITH.—Near Bungay, Suffolk. Mr. STONE.]

P. April—May.

*complanatum*. H. Plant flatted, much branched: capsules egg-shaped: lid conical: leaves in 2 rows, tiled, bluntly egg-shaped, doubled together.

Dill. 34. 7—Vaill. 23. 4; and 21. 17—H. ex. xv. 5. row 2. 5, and row 3. 15.

Forming broad leafy strata on the trunks of trees. Plant from one to three or four inches long, creeping. Leaflets alternate, in two rows, in the young shoots very closely crowded. Fruit-stalks half an inch high, numerous on the mid-rib, or from the fork of the branches. Fence large, hairy. Capsules egg-shaped. Lid conical, beaked. WEIS. Two or three inches long. Branches opposite, or alternate. Leaves soft, pellucid, yellow green, shining. Fence scaly. Veil slender, whitish, crooked. DILL.

Trunks of trees.

P. March—April.

A. (4) Branched, winged with leaves: capsules drooping.

*taxifolium*. H. Unbranched: fruit-stalks from the base: capsules oblong: lid taper-pointed: leaflets oblong, acute.

E. bot. 426—Dill. 34. 2—Vaill. 24. 11—Fl. dun. 473. 2.

Leaflets about twelve pair on each shoot, when young; more in the older shoots. Capsules nearly cylindrical, drooping,

broadest at the mouth. *Veil* turned up at the end. *Weis.*  
*Leaves* spear-shaped, with a point at the end. *WEBBER.* *Shoots*  
 several from one root, not branched; dark green. *Fence* at the  
 base of the shoots, composed of a few scales. *Lid* scarlet, beak  
 pointed, crooked. *Veil* pale. *DILL.*

Woods, hedges, and shady banks.

Feb.—May.

H. Branched: fruit-stalks lateral: capsules egg-shaped. rotundifo-  
 lium.

*Scop.* 62, 1333, at ii. p. 321.

*Shoots* slender, hardly one inch long, not numerous. *Leaves*  
 thinly set, *Capsules* reddish; mouth with two rows of fringe.  
*Lid* with a slender beak. *Veil* white, chaffy. *Scop.*

Woods, at the roots of trees, Scotland, [and on walls. *Scop.*]

H. Shoots branched; branches winged with leaflets: fruit- lu'cens.  
 stalks lateral: capsules drooping; leaflets egg-shaped,  
 dotted.

*Dicks. h. s.—Dill.* 34. 10—*Schmid.* 57. 2.

Trailing. *Branches* brittle, blunt. *Leaves* egg-shaped,  
 pointed, flat, shining as if wet with dew. *Fruit-stalks* one inch  
 and a half long, lateral. *Capsules* nodding. *Scop.* *Shoots* about  
 two inches long, sometimes branched. *Leaves* large, thin, soft,  
 pellucid, pale green, placed alternately in two or three rows.  
*Capsules* small for the size of the plant, egg-shaped, more or less  
 nodding, dark brown. *Lid* spit-pointed. *Veil* straight, sharp,  
 whitish. *DILL.*

Woods, wet ditches, wet shady marshy places.

P. April—June.

B. (1) *Branches* irregular: *leaves* irregular; *capsules*  
 upright.

H. Shoots upright; leaves egg-shaped, ending in long stella'tum.  
 points, rather expanding, coloured.

*Dicks. h. s.—Dicks.* 127—*E. bot.* 1302—*Dill.* 39. 35—*Vaill.*

28. 10.

*Shoots* somewhat branched, somewhat tawney at the base,  
 yellowish at the end. *Leaves* spear-awl-shaped, the ends stand-

ing out. *Fruit-stalks* few, lateral, nearly an inch long, almost upright, red. *Capsules* egg-shaped, but bulging on one side. *Lid* short, pointed, distinguishable at first sight from *H. cuspidatum*, by the leaves at the ends of the stems not being rolled in, but expanding. DICKSON.

*Yellow Starry Feather-moss.* Turfy bogs. RELH. n. 1018 [Low wet meadows in Earsham, near Bungay, Suffolk. Mr. STONE.] March

sciuroides. *H.* Shoot upright, somewhat branched, bent; leaves tiled egg-spear-shaped, hair-pointed; capsules oblong lid conical.

*Dill.* 41. 54—*Vaill.* 27. 12—*Kniph.* 6—*H. ox.* xv. 5, row the last, 27.

*Shoots* two inches long, cylindrical. *Involucrum* rising halfway up the fruit-stalk. *NECK.* *Stem* creeping, three or four inches long. *Shoots* from one to one and a half inch; seldom branched. *Leaves* closely tiled, egg-spear-shaped, pointed ending in hairs. *Fruit-stalks* lateral, upright, half inch high. *Involucrum* slender, scaly. *Capsules* cylindrical-egg-shaped. *Lid* conical, pointed. *Fringe* white. *Veil* yellow at the end. WEIS. Creeping, interwoven, fixed to the bark of trees. *Branches* numerous, upright, simple or divided, but generally bent like the tail of a squirrel. *Involucrum* at the base of the branches, slender, scales narrow, ending in short hairs. *Capsules* upright, dark brown when ripe. *Lid* very small. *Fruit-stalks* twisting when dry. DILL.

Trunks of old trees. [Bungay, Suffolk. Mr. STONE.] P. Feb.—April

refus'cens. *H.* Branches compressed; leaves hair-pointed, shining; capsular upright; lid conical. DICKS.

*Dicks.* 8. 4.

But little branched; branches cylindrical but flattened, entirely covered with the tiled leaves, which are slender, straight, spear-shaped, ending in a hair, seldom a full green, but generally yellowish or reddish. *Capsules* nearly cylindrical, slender, upright. *Fringe* white. *Lid* crimson, conical, acute. HAL-  
LER. Has been confounded with the *H. nitens*, but differs from

that in having upright capsules, a very short involucre, and few, but long branches; Dicks. Fasc. iii. p. 9.

[Cryby Deseil, though rarely with capsules. Mr. GRIFFITH.]

H. Shoots ascending; fruit-stalks lateral; capsules ob-crisp'um. long; beak of the lid bent; leaves oblong, blunt, wrinkled; in 2 rows.

*Dicks. h. s.—E. bot. 617—Dill. 36. 12—Hall. enum. 3. 5, at p. 109, hist. 46. 5, at iii. p. 56—Happ. ii.—Hypn. 5—H. ex. xv. 5, row 3. 10, p. 625.*

The most elegant of the genus. Grows in dense broad strata. Shoots a span long, flat, a little raised. *Leaflets* closely tiled, alternate, in two rows, spear-shaped, blunt, shining, wrinkled. *Fruit-stalks* half an inch long, lateral. *Involucre*, leaves paler. *Capsules* nearly upright, egg-shaped. *Lid* with a long beak. *Veil* long. WEIS. From two to twelve inches long, crowded and lying one upon another, branches compressed, blunt, undivided, alternate or in pairs. *Leaves* crisp, transversely waved. The whole plant is pale green in winter, yellowish in summer. DILL.

On chalk hills near Gravesend, and on the banks of the Thames out of the tide's way. On St. Vincent's rocks, and on the Welsh mountains. [About Kirkby Lonsdale, Westmoreland. Dr. J. E. SMITH. On rocks in Garn Dingle, three miles from Denbigh. Mr. GRIFFITH.] P. March—April.\*

H. Shoots creeping; leaves broad, spear-shaped, pointed, medium. tiled but open; capsules cylindrical, fringed.

*E. bot. 1274—Dill. 42. 65.*

Crowded together. *Leaves* pressed when dry. *Fruit-stalks* less than half an inch in length. DILL.

\* M. Parmentier has published some observations on this Moss, proposing it as a substitute for wool for stuffing mattresses and furniture. When beaten and properly prepared it is said not to retain moisture nor form into lumps. It is little liable to decay, and is reported to be free from the property of imbibing and communicating contagion, which animal substances possess. We, however, suspect some other mosses may be found still more adapted to such purposes than this kind. E)



*Long-headed Feather-moss.* (Trunks of trees and on stones in Scotland, and Ireland. About the roots of young Oaks in Kempston wood, Bedfordshire. Rev. Dr. ABBOT.

P. Jan.—Feb. E)

*pulchellum*. H. Shoots crowded, upright; branches somewhat bundled, strap-shaped; fruit-stalks long; capsules upright, somewhat oblique. DICKS. ii. 13.

*Dicks. h. s. and fasc. 5. 6.*

Shoots short, crowded in close tufts. Branches nearly equal, expanding. Leaves near together, egg-spear-shaped, shining. Involucrum short. Fruit-stalk as long again as the shoot, rising from its base, upright. Capsules inversely egg-shaped. Fringe toothed. Lid pyramidal. Veil, none on the specimens. DICKSON.

Shady woods, Scotland.

*viticulosum*. H. Shoots branched, prostrate; leaves oblong, acute, expanding; capsules oblong; lid conical.

*Dicks. h. s.—Dill. 39. 43—H. or. xv. 5, row 1. 7—Vaill. 23. 1—Pluk. 47. 4.*

Covering the trunks of trees in large patches. Stems fibrous, creeping very long, branched. Branches upright, when dry cylindrical, and twisted like a rope. Leaflets nearly triangular, the upper ones largest. Fruit-stalks about an inch high, rising from the bosom of the branches, out of small hairy scaly fences. Capsules small, shining. Lid very short, conical, pointed. Mouth fringed when magnified, smooth to the naked eye. Weis. Fruit-stalks and capsules upright. Appears crisp when dry. Leaves triangular, keeled, pointed, but not hairy. DILL.

On trunks of trees, and sometimes on the ground on the chalk hills between Northfleet and Gravesend. DILL. 307.—[By the North west corner of the bridge at Kirkby Lonsdale; and in Armingdale Wood, near Norwich. Dr. J. E. SMITH.—Earsham, Suffolk. Mr. STONE.] P. March—April.

B. (2.) Branches irregular; leaves irregular; capsules leaning.

H. Stem elongated, somewhat branched; leaves heart-ruscifolium-shaped, concave, finely serrulated, diverging; lid, convex, beaked.

*Hedw. stirp. iv. 4-E. bot. 1275-Dill. 38. 31.*

Adhering to stones under water, in broad patches, one or two inches or more in length, according to the rapidity of the stream. Branches upright, cylindrical below, flat above. Leaves egg-spear-shaped, closely tiled, two-rowed, and less compacted upwards. Fruit-stalks on the stem between the shoots, and from the bosom of the leaves. Capsules short, thick, drooping. Lid beaked. Mouth, fringe long. WEIS. Leaves deep dull green. Fruit-stalks half an inch high. DILL.

Long-beaked Water Feather-moss. *H. riparioides*. HEDW. *H. rutabulum*  $\delta$ . HUDS. and Bot. arr. ed. ii. In rivulets and waters in Yorkshire. DILL.

The shoots are often incrustated with calcareous earth, which in time it accumulates so as to form stones of twenty or thirty pounds weight. WEIS. P. March—Sept.

H. Shoots trailing; fruit-stalks lateral; leaves egg-spear-lutes'cens-shaped, scored.

*Dicks. h. s.-E. bot. 1301-Hedw. stirp. IV. 16-Dill. 42. 60.*

Differs from *H. sericeum* in the shoots being longer, more slender and limber; the branches more distant and less crooked, the fruit-stalks longer, the leaves and the involucre long-er; the capsules rather shorter, and bent; the lid also bending. Fruit-stalks from the shoot as well as from the branches. DILL. Plant of a pale yellow green.

Yellowish Feather-moss. *H. sericeum*  $\gamma$ . HUDS. ed. ii. 506. Chalk Hills between Northfleet and Gravesend, and on trunks of trees near Woding and Beddington, Surrey. HUDSON.—Gogmagog Hills. RELHAN. P. Jan.—April.

H. Leaves spear-shaped, scored, hair-pointed; capsules cassu'bicum, cylindrical, leaning. DICKS.

*Vall. 27. 1.*

Nerves on the leaves more than three. *Capsules* never upright. Scop.

On trees, in moist shady places.

intrica'tum. H. Shoots creeping; branches short; fruit-stalks lateral; capsules urn-shaped, beak bent; leaves spreading, spear-shaped, taper-pointed.

*E. bot.* 202-Vaill. 28. 2.

Forms a close green mat on the decayed bark of trees in damp woods. Shoots several inches in length. Branches short, slender. Veil slender, cylindrical, whitish. *E. bot.*

First found by Mr. Teesdale, and since by Dr. Smith, in woods on the south east side the river at Matlock Bath.

undula'tum. H. Shoots branched; branches somewhat winged; leaves waved and folded; fruit-stalks lateral and axillary.

*Dicks. h. s.-E. bot.* 1181-Dill. 36. 11-H. or. xv. 6. 33.

A span long, lying flat. Leaflets closely tiled, in a double or triple series. WEIS. Fruit-stalks long, slender, reddish. Veil straw-coloured, with a brown spot at the end. Capsules oblong. Lid spit-pointed. Mouth fringed. Involucrum, leaves narrow, short, bent back. Shoot not always branched; its rib yellowish. Leaves tender, pellucid, smooth, shining, pale green, not changing colour when dry. Involucrum lateral, and in the angles of the branches, composed of short, narrow reflected scales. Fruit-stalks one and a half to two inches long. Capsules rust-coloured, crooked when ripe. Lid pointed. DILL.

Waved Feather-moss. Woods, shady places, and moist rocks. On the top of Snowdon. (In Bingley Woods, Yorkshire, where it may be frequently observed in fruit. HAILSTONE in WHITAKER'S Craven. E.) P. March-April.

al'bicans. H. Shoot branched, ascending; fruit-stalks lateral; capsules oblong, lid conical, blunt; leaves oblong-spear-shaped, bristle-pointed.

*Dicks. h. s.-Hedw. stirp.* iv. 5-*E. bot.* 1300-Vaill. 26. 9-Dill. 42. 63.

Shoots about 2 inches long, scattered, almost upright, but little branched, yellowish green mixed with white. *Leaves* spear-shaped, bristly at the end, every where surrounding the stem. *Fruit-stalks* lateral, half an inch upright, red; but rarely found. *Capsules* small, oval, oblique, rather nodding; yellow red. *Lid* short. *Mouth* fringed. DICKSON. Scarcely upright, not crowded together, a little branched, shoots slender, yellowish pale green. *Leaves* slender, pressed to, soft, shining. *Involucrum* hairy. DILL.

*Whitish Silky Feather-moss.* In loose sandy soil on heaths, and places thinly clothed with grass: but seldom with capsules. DILL. 329.—[Bungay Common, Suffolk. Mr. CROWE. Mr. STONE.] (On the sandy cliffs at Gorleston, near Yarmouth. Mr. TURNER. *E. bot. E.*) May.

H. Branches crooked; leaves egg-shaped, scored, acute, striatum. expanding in every direction; lid pointed.

*Hedw. stirp.* iv. 13—*Dill.* 38. 30—*Vaill.* 27. 1. *H. ox*, xv. 5, row 3. 8. p. 625.

Slender, creeping, matted together, irregularly branched. *Leaves* small, triangular, pale green. *Fruit-stalks* half to three quarters of an inch in length. *Capsules* swollen, short, nodding. *Involucrum* slender, scales narrow, ending in hairs. DILL.

*Leaves* scored. *Fruit-stalks* often twisted, untwisting when moistened and turning the capsule from the right to the left.

*Hypn. rutabulum* γ. HUDS. and Bot. arr. ed. ii. Woods and bushes, on the roots and trunks of trees. DILL. P. Jan.

H. Branches bowed back; leaves egg-shaped, spreading; triquetrum. fruit-stalks axillary.

*Dill.* 38. 28—*Vail.* 28. 9—*Burb.* iv. 63. 1.

*Branches* unequal. *Leaves* triangular, pointed. LINN. Spreading to a foot in length, reddish, elastic, rising upwards. Often grows upright. *Branches* frequently bent to the ground, their extremities taking root. *Leaves* broad, triangular, not



keeled, tender, pellucid, pale green, pointed. *Involucrum* rigid, oblong, composed of reflected scales, sometimes two or three together. *Fruit-stalks* seldom more than an inch high. *Capsules* upright, thin; when ripe thicker, leaning, crooked. DILL.

Woods about the roots of trees, and in dry barren pastures.

P. Sept.—Jan.\*

flu'tans.

H. Shoots branched; capsules oblong; lids conical; leaves egg-spear-shaped, distant, expanding.

Dill. 38. 33—Vaill. 33. 6.

*Fruit-stalks* fine, red, in some plants very long, in others scarcely an inch long. *Capsules* red, hooked, very short, fringed at the mouth. LINN. Much branched, slender, a foot long or more, either upright or floating. *Leaves* narrow, alternate, those on the stem fewer and broader than those on the branches, soft, pellucid, yellow green. *Capsules* not hitherto found. DILL.

Stagnant waters. Marshy places in Ireland, in a ditch near the road from Oxford to Marston, ditches near Hackney, and elsewhere about London, and in a small pond in a pasture opposite Great Founder's Close, Cambridge.

utab'ulum.

H. Branches irregular, ascending; leaves tiled, egg-shaped, acute, sharp-pointed; lids conical.

*Hedw. stirp.* iv. 12—*Burb.* iv. 62. 2—*Fl. dan.* 824. 2—*H. ar.* xv. 6. row 5. 18—*Vaill.* 27. 8—*Dill.* 38. 29, capsules the best, but the shoots, as Haller remarks, are too round—*H. ar.* xv. 6. 35.

*Leaves* pellucid. Mouth fringed. WEIS. *Leaves* triangular, green, shining when dry, not keeled. *Capsule* dark brown, shining. DILL.

Grows much crowded, in patches, and full of fructifications. Mr. STACKHOUSE. Woods and hedges, on the roots and trunks of trees and shrubs: on the ground in barren places.

P. Sept.—Jan.

Var. 2. Upright, short. Leaves slender.

Marshy places. Dill. in *R. Syn.* p. 83. 2. 18.

\* Used to pack glass and earthen ware, WEIS.

C. (1) Shoots winged with branches: capsules upright.

H. Leaves nearly circular, somewhat concave; capsules Smithii. egg-cylindrical; veil hairy upwards. Dicks. ii. 10.

E. bot. 1326—Dicks. 5. 4.

Deep green. Shoots hard, woody, pointed: in the middle, or towards the end bowed in. Branches if pressed down recovering their former direction, on the pressure being removed. Wings strap-shaped, bowed in and curled at the ends. Leaves tiled, open, pressed to at the base. Involucrum cylindrical, the leaves egg-spear-shaped, ending in hairs. Fruit-stalks numerous, solitary, very short. Capsules upright, egg-shaped, nearly cylindrical, reddish brown, shining. Fringe obscurely toothed. Lid roundish, with a beak a little oblique. Veil slanting.

DICKSON. Curling Wing-moss. *Pterogonium Smithii*. Fl. Brit. Trunks of trees (at the half way house, E.) near Barham Downs, Kent. Dr. J. E. SMITH. (Near Walthamstow. Mr. DILLWYN. Near Weymouth. Mr. GROULT. E. bot. E.)

H. Leaves egg-spear-shaped, tiled, pointed, in 2 rows, penna'tum. compressed, waved; involucrum as long as the fruit-stalk.

Dicks. h. s.—Hedw. stirp. iii. 20—Dicks. fasc. i. 8.

Differs from *H. complanatum* in the leaves being transversely waved, and the fruit-stalk not being longer than the involucrum; and from the *Fontinalis pennata* in the capsule standing out of the involucrum. DICKSON.

*Neckera pumila*. Hedw. *Hypn. pumilum*, and *H. Dicksoni*, of GMEL. syst. veg. [Trunks of trees in woods between Troutbeck and Ambleside, Westmoreland. Dr. J. E. SMITH.]

H. Branches very short; leaves spear-awl-shaped, shining.

Fl. dan. 1123. 2—Dill. 39. 37.

Shoots upright, one to three inches high. Branches lateral. Leaves closely set. Fruit-stalks terminating and axillary. Capsules egg-shaped, leaning when ripe. Lid short, conical, point-

ed. *Mouth* entire. WEBER. *Leaves* very narrow, almost hair-like. *Involucrum* very long. DILL. *Fruit-stalk* near two inches long; capsule rather crooked, which gives it the appearance of leaning.

Turf bogs, Scotland. DICKS. ii. 12.

prolixum. H. Shoots very long, rather leafless below; capsules egg-shaped, fringed; fruit-stalks lateral, ascending, short.

Dill. 38. 32; and 85. 20.

Shoots twelve inches or more in length, upright in stagnant, floating in running water, closely crowded, sending out a few short branches towards the ends. *Leaves* numerous, small, tiled; under ones the largest. *Involucrum* a small bulb, composed of a few short scales. *Fruit-stalks* short. *Capsules* small. DILL.

Alpine rivulets in Scotland. On Ben Glow.

plumosum. H. Shoots creeping; branches crowded; leaves tiled; awl-shaped.

Dicks. h. s.—Hedw. stirp. iv. 15—Dill. 35. 16.

Shoots about a span long; brownish, with dark rust-coloured wool underneath, by which it adheres closely. *Branches* from each side of the shoot, generally undivided, clothed with very slender soft and shining leaves. *Involucrum* hairy. DILL.

*H. sericeum* β. HUDS. 506. Trunks and roots of trees in Enfield Forest, and on brick walls about London. DILL.

Jan.—Feb.

C. (2) Shoots winged with branches; capsules leaning.

proliferum. H. Shoots proliferous; nearly flat, not shining; fruit-stalks several together; involucrum bristly.

Curt.—Dill. 35. 14—Vaill. 25. 1—H. ox. xv. 5, row 3. 20—Tourn. 326. c.—Ger. 1372. 7—Ger. em. 1561. 7—Park. 1310. 9—J. B. iii. 765. 1.

Its structure is very singular; one large *compound shoot* proceeding from the middle or disk of another, and this repeated several times in the same plant. LINN. A span long or more, doubly winged. *Fruit-stalks* an inch long (or more) from the middle of the shoot, and from the rib of the branches one to three (four or five) in a place. *Involucrum* large, conical, hairy. *Lid* conical, pointed. *Veil* oblique. WEIS. *Capsules* beaming, reddish, thick. *Mouth*, fringe in a double row. *Leaves* so minute as hardly to be well distinguished by the naked eye. *Capsules* reddish, at first straight, then crooked. The leaves smaller, not shining, the shoots more serpentine, and the bristly *involucrum* distinguish this from the *H. parietinum*. DILL. *H. parietinum*, and *H. proliferum* of Gmel. syst. veg. are both the same plant.

Heaths and thick shady woods. P. Dec.—Feb. CURT.

Covers the surface of the earth in the thickest woods through which the sun never shines, and where no other plant can grow. LINN.

H. Shoots proliferous, nearly flat, shining; fruit-stalks parietinum. several together; involucrum scaly.

Vaill. 29. 1—Dill. 35. 13—Burb. ii. 1. 2, and ii. 2. 1—Happ. 1—Hypn. 3—Vaill. 29. 1—Schmid. 58. 3.

*Fruit-stalks* 4, 5, or more together, at the base of the branches; about fifteen lines long. *Shoot* bent at the places where the branches issue out, so as to be zig-zag. Very like the *H. proliferum* in its mode of growth, and the proliferous shoots sending out other similar shoots, but the leaflets are more distinct, less compacted together, of a pale green with a silky gloss. WEIS. *Shoots* lying on the ground, from a span to a foot long, consisting of three or four parts, shewing the annual increase, and as it grows in length at one end, the other end is converted into roots. *Branches* winged. The new shoot puts forth in the spring not from the end of the old one, but near to its end; is very densely clothed with leaves, and after a time sends out branches. *Fence scales* reflected. DILL. Both in this and in the *Hypn. proliferum*, the shoots resemble the winged leaves of Ferns.

Woods, heaths and shady places.

P. Feb.—March.\*

H. Shoots simply winged; leaves oblong, taper-pointed, filicinum, reflected, pointing one way; capsules nearly cylindrical; lid convex.

\* It is used in Sweden to fill up the chinks in the walls of timber houses.



## CRYPTOGAMIA. MUSCI. Hypnum. (C. 3.)

*Fl. dan.* 1123. 1—*Vaill.* 29. 9—*Dill.* 36. 19.

*Fertile shoots* trailing, the barren ones upright. *Fruit-stalks* one or two inches long; from the bosom of the branches. *NECK*. *Shoots* from three to six inches, undivided, winged. *Wings* leafy. *Fruit-stalks* from the middle of the shoots, one or more in a place. *Fence* hairy. *Capsules* leaning. *Lid* conical, short, blunt. *WEIS.* Sometimes branched, always sending out numerous lateral shoots, which are shorter as they grow nearer to the end of the stem. *Leaves* very numerous, pleasant green, narrow, bent back. *DILL.*

Marshy places, and near springs. [Bungay, Suffolk. Mr. STONE.] P. March. Huds.—Summer. *DILL.*

Crista-castrensis.

H. Branches near together, bowed back.

*Dicks. h. s.—E. bot.* 1327—*Vaill.* 27. 14—*Dill.* 36. 20.

It very much resembles an ostrich feather from its shining parallel rays, by which, and by its silky hue, it is readily distinguishable. *Fructifications* seldom to be met with. *LINN.* *Fruit-stalks* half an inch to one inch long; from the base of the branches. *NECK.* Grows in broad patches, reclining, flat, one plant over another. *Leaflets* hooked, very sharp. *Branches* triangular, the ends bent back. *WEIS.* *Branches* crowded, ends reflected. *Leaves* numerous, bent back, yellowish green, downy, crisp. *DILL.*

Chalk hills, rocks, about the roots of trees in dry woods and stony soils. [Bungay Suffolk. Mr. STONE.] (Matlock, Dr. SMITH. E.)

P. March—June.

C. (3) Shoots winged with branches: capsules drooping.

du'bium.

H. Shoots taper-pointed; leaves upright but expanding; capsules oblong, crooked. *DICKS.*

*Dill.* 36. 21.

*Leaves* yellow green, smooth, narrow, spit-pointed, upright on the upper, reflected on the lower shoots. *Fruit-stalks* often bent and twisted in a young state; afterwards becoming straight. *Capsule* oblong, crooked when old. *Lid* short. *Involucrum* pyramidal, its scales hair-pointed. *DILL.*

Wet heaths and marshy places.

Feb.

abietinum.

H. Branches somewhat cylindrical, distant, unequal; leaves egg-spear-shaped, closely tiled.

*Dill* 35. 17-*Vaill.* 29. 12-*H. ox.* xv. row 4. 22. p. 626.

*Fruit-stalks* from the middle of the rib of the shoot, single, purple, straight, as long as the shoot. *Veil* upright, awl-shaped, pale. *Capsule* yellowish red; more bowed back than in any of the rest; edge of the mouth entire, with a short open fringe within. LINN. *Shoots* two to four inches long, elastic when fresh, brittle when dry. *Wings* limber, alternate below, opposite and shorter above. *Leaflets* egg-spear-shaped, scored, ending in hairs, closely tiled. WEIS. *Branches* straight. *Leaves* straight, which distinguishes it from the *H. filicinum*. Scop. Grows matted together, half upright, sometimes branched, three to five inches long. *Side shoots* awl-shaped, numerous, opposite, surrounded on every side by small dull yellow green leaves. No fructification yet found. DILL.

Mountainous places. On hills near Hinksey, Oxfordshire. DILL.—In shady places; and on Chalk hills about Northfleet.

P. March.

*H. Shoots* somewhat winged, trailing, fibrous; branches prælongum. remote; leaves egg-shaped.

*Hedw. stirp.* iv. 29-*Dill.* 35. 15-*Vaill.* 23. 9-*Buxb.* iv. 63; 3.

*Leaflets* serrated. At first sight distinguishable from all the other Hypniums by its shoots being very long, very closely crowded together, covering the trunks of trees in broad patches and hanging down. *Shoots* trailing, very tender, brittle when dry, a span long, or more, clinging to the trees by means of numerous brown woolly fibres. *Leaflets* small triangular, ending in a hooked hair, alternate, in a double row. WEIS. From a span to a foot in length, doubly winged. *Leaves* very small, triangular. *Fruit-stalks* an inch long, purple. *Capsules* dull green, brown when ripe, short, nodding. *Veil* pale green, straight. DILL.

Trunks of trees, rotten wood, and wet ground. [Bungay, Suffolk. Mr. STONE.] P. Oct.—Feb.

D. (1) *Leaves bent back: capsules upright.*

*H. Shoots* scattered, rather upright; leaves pointing one rugosum. way, wrinkled at the base; fruit-stalks axillary.

*Dicks. h. s.*—*Dill.* 37. 24.

*Leaves* spear-shaped, narrow, sharply pointed, closely tiled. POLLICH. *Shoots* seldom more than three inches long, thick, lying on the ground, crowded together, irregularly branched.

*Leaves* exceedingly crowded, dry, crisp, their points in one direction, yellow green, when old or dry quite yellow. The fruit-bearing plants grow a little distant from the others, and have a different appearance. They are thinner, more pointed, the leaves more uniform, and less yellow. *Involucrum* open, scaly at the origin of the branches. *Fruit-stalks* three quarters of an inch high. *Capsules* cylindrical, straight, slender, red when ripe. DILL.

In bogs in Scotland. Near Loch Rannoch. DICKSON.

flagella're. H. Shoots creeping; branches upright, rarely divided; leaves spear-shaped, taper-pointed, the ends reflected.

Dill. 39: 42.

*Leaves* small, smooth, not much pellucid, produces its capsules in September. DILL.

On stones near rivulets in the Highlands of Scotland.

D. (2) *Leaves bent back: capsules leaning.*

scorpioides. H. Branches waved, trailing, hooked; leaves pointing one way, tapering to a point.

Dicks. h. s.—E. bot. 1039—Dill. 37. 25.

*Branches* brown, hooked, and yellow at the ends. LINN. Shoots trailing, cylindrical, one to three inches long. *Branches* rising upwards, thick, bent and thicker at the ends, about one inch long. *Leaves* spear-shaped, often ending in hairs, wrinkled at the base. *Fruit-stalks* half an inch to one inch high. *Capsules* cylindrical, slender, leaning. *Lid* pointed. *Mouth* with a white fringe. WEBER. The *barren* plants are longer and thicker than the *fertile* plants, colour dark red, the ends purple and green. The *fertile* plants are entirely green, except here and there a little purple. DILL.

*Scorpion Hypnum.* Turfy bogs and marshes. Near Bishop's Castle, Shropshire, and about Penter, near Bangor. Near Norwich, and in the North of England; and at Corriattachan in Strath Swandie in the Isle of Sky. [Turf pits on Ellingham and Geldestone fens. Mr. STONE.—On Snowdon and Cader Idris Mr. GRIFFITH.]

P. Nov.—April.

squarros-  
sum. H. Branches straggling; leaves spear-shaped, acute, bent back in five different directions.



*Fl. dan.* 535. 1—*Dill.* 39. 38—*H. ox.* xv. 5, row 2. 2—*Fl.*

*dan.* 648. 3.

Often six inches long, creeping, rib a beautiful purple, shining through the interstices of the leaves. *Leaves* ending in a sharp point, as fine as a hair. *Fruit-stalks* one inch to one inch and half high, straight, springing from a cylindrical, scaly and hairy fence. *Capsules* egg-shaped, leaning. *Lid* blunt. *Mouth* wide open, fringe yellow. I have found capsules in July. *WEIS. DILL.* *Capsules* rarely met with: *RAY.* *Fruit-stalks* solitary or in pairs. *Lid* not large enough to cover the mouth of the capsule, but joined to it by a kind of groove. *Mr. STACKHOUSE.*

Moist meadows and pastures. P. Feb.—May.

Var. 2. Smaller. Leaves triangular, open, reflected. *DILL.*

*Vaill.* 27. 5—*Dill.* 39. 39.

Not much different from (1) except in the leaves being smaller, paler, closer set, and more bent back. *WEIS.* The capsules too are smaller, and the lid sharper. *DILL.*

Wet places.

H. Shoots creeping; branches crowded, upright, on one palus'tre. side the shoot; leaves egg-shaped, pointing one way; capsules nearly upright.

*Hedw. stirp.* iv. 1—*Dill.* 37. 27.

*Branches* upright, compressed, from half an inch to one inch high, numerous. *Leaves* in a double or triple series, sharp, hooked. *WEBER.* Shoots slender, creeping, with few leaves, and those shrivelled. *Branches* generally simple, short. *Leaves* dull green, hooked at the end. *Fruit-stalks* from the base of the branches, red, longer than the branches. *Capsules* oblong, a little inclining, brown when ripe. *Lid* larger in diameter than the capsule. *Veil* straight, pale. *DILL.*

*Leskia palustris.* *HEDW.* In wet places. On the banks of the Thames near Battersea. *DILL.* At the roots of trees and in wet stony places. *HUDS.* [Water fall at Roslin, near Edinburgh. *Dr. J. E. SMITH.* By the rivulet; in Garndingle. *Mr. GRIFFITH.*]

P. Jan.—April.

H. Shoots creeping; branches waved, upright; leaves lo'reum. pointing one way; capsules roundish egg-shaped.



*Dicks. l. s.*—*Dill.* 39. 40—*Vaill.* 25. 2—*H. or.* xv. 5, row the last, 24. p. 626—*Burb.* iv. 64. 1—*Ger.* 1370. 1.

*Fruit-stalks* from the base of the branches. *NECK.* Nearly allied to the *H. squarrosum*. *Ends* of the branches thickest, bent back. *Weiss.* *Fruit-stalks* more than an inch high, from the stem between the branches upright. *Capsules* egg-shaped, leaning. *Shoots* near a foot long or more, the ribs rigid, brittle, surrounded by pale green leaves, those towards the end bent back. *DILL.*

On the mountains in Crevetenan Ballenahinch, in the county of Down, Ireland; in hilly situations near Gloucester. *DILL.* In the mountainous woods of Breadalbane. *Mr. STUART*, in *Fl. Scot.* [Near Ambleside Westmoreland. *Dr. J. E. SMITH.*]

*April.*

adun'cum.

*H.* Shoots nearly upright, somewhat branched; leaves pointing one way, spear-awl-shaped, curled, branches hooked.

*Hedw.* iv. 24—*Dill.* 37. 26.

Resembles the *H. cupressiforme*, but the shoots are more straight, less branched; leaves longer, hooked, their ends pointing one way; fruit-stalks twice as long, rising as well from the middle of the shoot as from the bosom of the branches. The shoots are remarkably rigid. *Fruit-stalks* two inches long, rising out of a slender, short, scaly involucre. *Capsules* egg-shaped, distended, leaning. *Lid* conical, short, blunt. *Weiss.* *Plant* yellowish or tawny when growing out of the water. *RAY.* *Involucrum* oblong, slender, scaly. *Veil* straight. Lower leaves less hooked than the upper ones. *DILL.*

Marshy and watery places, bogs, and wet pastures. [Turf pits on Ellingham and Geldestone fens. *Mr. STONE.*]

*P.* April—Aug.

cupressi-  
forme.

*H.* Shoots somewhat winged: leaves pointing one way, hooked, awl-shaped at the end.

*Dicks. h. s.*—*Hedw. stirp.* iv. 23—*Fl. dan.* 535—*Dill.* 37. 23—*Vaill.* 27. 13—*Pluk.* 447. 6—*H. or.* xv. 5, row 2. 8.

*Fruit-stalks* from the base of the branches, and often twice their length. *NECK.* *Stems* two to four inches long, creeping, irregular. *Branches* irregular, very leafy. *Leaflets* very densely tiled, hooked and hairy at the end. *Fruit-stalks* from the pri-

capitulum stem, an inch long. *Capsules* cylindrical, at first upright, leaning and bent when ripe. *Lid* short, conical, pointed. *Veil*, whilst young, straight, oblong. WEIS. *Stems* stratified, forming large and dense patches; two or three inches long, irregularly branched. *Leaves* small, crowded, soft, ending in hooked points, pleasant green, smooth. Upper branches thick, bent at the ends; lower ones thinner and straighter. The plant has the appearance of crispness, but is not really so. DILL.

Woods, at the roots of trees, and on thatch. *R. Syn. St.*

P. Feb.—March.

H. Shoots compressed, winged with branches; leaves compressed, hooked, taper-pointed; capsules egg-shaped; lid sum. short, conical.

*Hedw. stirp. iv. 22—Dill. 36. 22.*

Resembles the *H. filicinum* in the crisp appearance of its leaves, its winged shoots and greenish yellow colour, but it is much shorter, less branched, its branches more creeping and forming a more acute angle with the stem. *Leaflets* hooked, ending in hairs. *Capsules* thick, egg-shaped. WEIS. Two or three inches long, tender, compressed. *Leaves* narrow, in two rows, sharp, points bent backwards, pale green, soft, shining. *Fruit-stalks* one inch long, reddish. *Capsules* oblong egg-shaped, green, upright, yellow red, and inclining when ripe. DILL.

*Hypnum molluscum.* HEDW. Woods on the trunks of trees and on young twigs. In a wood near Tottenham. DILL.

March—April.—In Summer. WEIS

E. Plant shrub-like: branches in bundles.

H. Shoot upright, naked below, above with bundles of dendroides. leafy branches; leaves strap-spear-shaped, tiled; capsules nearly cylindrical, upright; beak bent.

*Dill. 40. 48—Fl. dan. 823. 2—H. ox. xv. 5. row 5. 31—Tourn. 326—Vail. 26. 6—Hupp. i. Hypn. 1.*

Readily distinguished by its stems closely compacted together, its shrub-like appearance, from two to four inches high, terminated by a bush of branches. *Branches* upright, cylindrical, smooth, pointed at the end. *Leaves* egg-spear-shaped, pointed, flat, closely tiled. WEIS. *Fruit-stalks* more than an

inch long, from the base of the branches; upright. Capsules slender, upright. Lid conical, short. Veil slender. Dill. Fruit-stalks longer than the shoots. Veil covering the whole capsule. Leaves a little serrated. LEERS.

Moist woods and shady places, about the roots of trees, and in moist pastures. P. Feb.—March.

alopecu-  
rum.

H. Shoot upright: branches in bundles, terminating, subdivided: capsules rather drooping.

Dill. 41. 49—E. bot. 1182—Vaill. 23. 2, and 5—H. or. xv. 5, row the last.

Leaves of the stem open. LINN. In its tree-like mode of growth it resembles the *H. dendroides*, but the shoots are longer, the trunk is taller, the branches expand more, and are more frequently branched again; the extremities are not straight, but hanging down, and the leaves expanding. When dry the leaves bend back at the points, but in the *H. dendroides* they lie close pressed to. WEIS. Stem four or five inches high, covered with whitish pointed scales. Leaves serrated. Fruit-stalks shorter than the branches, bent. Capsules egg-shaped. Lid, beak bent. LEERS. Stems light red, rising from a trailing root. Leaves broad at the base, tapering to a point, alternate. Involucrum scales ending in hairs, compact. DILL.

Fox-tail Feather-moss. Moist and shady places at the roots of trees, and by the sides of rivers. P. March—April.

F. (1) Shoots nearly cylindrical: capsules upright.

gracile.

H. Shoots creeping: branches cylindrical, nearly upright: capsules egg-shaped.

Hedw. stirp. iv. 6—E. bot. 1085—Dill. 41. 55—Fl. dan. 649. 2.

Hangs suspended from the bark of trees in numerous cylindrical pointed branches bending upwards, and somewhat resembling the claw of a bird. Fruit-stalks from the base of the branches, half an inch high. Capsules upright, pointed, ochrey colour when ripe. DILL.

(Slender Hypnum. Forms great patches on rocks or trees about Edinburgh, but the fructification has rarely been observed in Britain, though common in France and Italy. *Pterogonium gracile*. E. bot. E.) *H. ornithopoides*, HUDS. *Pterigynum*



*drum gracile.* HEDW. Trunks of trees and rocks. On beech trees in Enfield Chase. On the masses of stone called Grey Wethers, in Wiltshire! P. Feb.—April.

H. Shoots branched: branches bowed in, sometimes attenuatum, pering, sometimes thickening; leaves egg-shaped, pointing one way: capsules upright, tooth fringed. DICKS. ii. 13.

*Hedw. stirp. i. 12—Dill. 42. 66.*

*Fruit-stalks* upright, lateral. *Veil* slender, twisting. *Capsules* cylindrical. *Beak* blunt. *Fringe* double, outer row of teeth sixteen. HEDWIG. Rather thick, much branched, yellow green, tawny when dry. In large patches on the trunks of beeches, particularly on the Northern side. DILL.

Woods on trunks of trees, Scotland.

H. Shoots upright, thread-shaped, somewhat branched: stramin'eum, leaves egg-spear-shaped, without a mid-rib, tiled. DICKS. 6.

*Dicks. h. s. and fasc. i. 9.*

*Shoots* nearly upright, strap-shaped, slender, when dry very brittle, two inches and more in length, straw-coloured, sometimes simple, or with one or two branches. *Leaves* convex and concave, glittering, pressed to. *Fruit-stalks* lateral, upright, red, one and sometimes two inches long, solitary or two together, *Capsules* egg-shaped, upright, bulging on one side. *Lid* short, somewhat pointed. DICKSON.

In a marshy place on the West side of Hampstead Heath, near London.

H. Shoots creeping; branches and capsules cylindrical; leaves closely tiled, egg-shaped, pointed. DICKS. cum. ii. 12.

*Dill. 41. 57.*

*Shoots* (on the ground) sometimes branched, soft, shining, pale green or yellowish. *Leaves* narrow, not hairy, pressed to. *Fruit-stalks* reddish, one third of an inch long. *Capsules* upright, slender, cylindrical. *Lids* pointed. DILL.

Woods, on the trunks of trees, Scotland.



F. (2) Shoots nearly cylindrical: capsules leaning.

riparium. H. Shoots branched: leaves pointed, open, distant.

*Dill.* 40. 44—*Hedw. stirp.* iv. 3—*Fl. dan.* 649. 1—*Schmid.* 57.

3—*Burb.* ii. 3: 3 and below with large winged capsules.

*Stem* four to six inches long. *Shoots* few and irregular, cylindrical if above, winged if below the surface of the water. *Leaves* egg-shaped, closely tiled on the young cylindrical shoots, more distant and spear-shaped on the principal stem, and hairy at the end. *Fruit-stalks* an inch long, upright, lateral. *Capsules* egg-shaped. *Lid* conical, beak short. *Mouth* fringed. *Veil* upright, covering the young capsule. *Involucrum* very short. *Weis.* When growing out of the water, or where it is often exposed to the air, the leaves are shorter and blunter, surrounding the stem, but when it is always immersed in water they are longer, more pointed, and wing the stems. *DILL.*

On walls, and moist stony places on the banks of rivers, on planks and stones about water mills, and in rivers. [Bungay, Suffolk. Mr. STONE.]

P. Sept.—April.

muralis. H. Shoots creeping; branches mostly upright, in one direction; leaves egg-shaped, concave. *DICKS.*

*Hedw. stirp.* iv. 30—*Dill.* 41. 52.

About an inch long, branches very short, mostly upright. *Leaves* numerous, dark green, not shining. *DILL.* *Fruit-stalks* from the base of the branches. *Leaves* ribless.

*Hypn. myosuroides* γ. *HUDS.* and *Bot. arr.* ed. ii. On walls. Dec.—Jan.

molle. H. Shoots pendent, slender, very much branched; leaves tiled, egg-shaped, acute; capsules roundish. *DICKS.* ii. 11.

*Dicks.* 5. 8.

Whole plant soft, flaccid, and flexile. *Shoots* bundled, floating, roundish, somewhat zig-zag. *Branches* of very unequal lengths, the ends mostly blunted. *Leaves* upright, concave at

the base, open at the end, broad-egg-shaped. *Scaly bulb*, leaves spear-shaped, taper-pointed. *Fruit-stalks* few, short, bowed in. *Fringe* with a ring, with many teeth. *Lid* and *Veil* not found.

DICKSON.

Banks of rivulets in the Highlands of Scotland.

H. Shoots spreading, winged with branches, ending in a cuspidatum. long point: leaves oblong, taper-pointed: capsules cylindrical: lid conical.

*Dicks. h. s.—Dill. 39. 34—Burb. ii. 3. 1 and 2.*

The sharp rigid points at the ends of the middle and terminating shoots, afford a ready mark of distinction. From one to four inches high. *Fruit-stalks* two or three inches long, upright, lateral. *Involucrum* scaly, long. *Capsules* egg-shaped, thick, a little bent, leaning. *Lid* blunt, short, scarlet. *Mouth* fringed. WEIS. Pale green, yellowish or reddish when in fruit. *Leaves* alternate, thin, pellucid, shining. DILL.

Bogs, marshes, wet pastures and moist woods.

P. March—May.

H. Shoots spreading: branches numerous, very short: *filifolium*. leaves awl-shaped, acute: capsules oblong: lid conical, blunt.

*Dill. 42. 62.*

Forming a compact interwoven tuft. Much branched; branches slender. *Leaves* very narrow, smooth, resplendent green, when dry pressed to, standing out when fresh. *Fruit-stalks* half an inch high, very slender, reddish. *Capsules* slender, at first upright, afterwards leaning a little, and again upright when ripe. *Involucrum* slender, hairy. DILL.

*H. filiforme*. HUDS. and Bot. arr. ed. ii. Trunks of trees.

P. Feb.

H. Shoots and branches diverging, nearly upright, blunt. *illecebrum*.

*Dill. 40. 46—Vaill. 25. 7—Fl. dan. 706. 1.*

*Leaves* ending in a spit-point; very closely tiled. Pale, shining, tender, like the *H. purum*, but differs in its branches

## CRYPTOGAMIA. MUSCI. Hypnum. (F. 3.)

being blunt, thick, short, not winged. NECK. *Involucrum*, leaves ending in hairs. *Fruit-stalks* half an inch high. *Capsules* egg-shaped, upright; when old leaning a little. *Lid* pointed. *Mouth* fringed. WEBER. *Leaves* roundish, entirely covering the stalks. *Capsules* small, short, upright. RAY. *Branches* cylindrical. *Leaves* very pale green. DILL.

Heaths, shady places, and moistish pastures. HUDSON.

P. March—April—Oct.

filamentous,

H. Shoots crowded, thread-shaped, branched; capsules egg-shaped, fringed: involucrum bulb-like. DICKS. ii. 11.

Dill. 36. 18.

Crowded, compressed, closely interwoven, so that it is hardly possible to extricate a single plant. Shoots and branches cylindrical, not thicker than a strong sewing thread. *Fruit-stalks* purple, an inch long. *Capsules* slender, straight, reddish and bent when ripe. *Involucrum* oblong, large, composed of unequal scales. DILL.

Woods in Scotland. [Crib y Ddeseil. Mr. GRIFFITH.]

F. (3) Shoots nearly cylindrical: capsules drooping.

pu'rum.

H. Shoots winged, spreading, awl-shaped: leaves egg-shaped, blunt, approaching.

Curt. 207—Fl. dan. 706. 2—Dill. 40. 45—Vaill. 28. 3.

*Branches* bowed. *Leaves* ending in a spit-point. NECK. Readily known by its peculiar sleek habit, by its freedom from dirt, and its long, cylindrical winged scaly shoots. A span long in wet, but shorter in dryer places. *Fruit-stalks* one to two inches high, from the mid-rib of the shoot and branches; upright, shining. *Involucrum* oblong, scaly. *Capsules* cylindrical, leaning. *Lid* beaked. *Mouth* fringed. WEIS. *Stems* nearly cylindrical, upright or reclining; often branched. *Branches* winged. *Leaves* blunt, thin, soft, smooth, rather shining, when dry crumpled. DILL.

Pastures, meadows, banks, and woods.

P. Nov.\*

Var. 2. More slender. Mid-rib of the leaves red.

\* Fishermen make use of it to scour their worms.



*Dill.* 40. 47—*Vaill.* 29. 10—*Neck. meth.* 1. 10—*Buxb.* iv. 64. 1.  
the right hand of the upper figures; and 3.

Longer and more slender than the preceding, branches and leaves more pointed, more shining when dry, more thinly set, and exposing more distinctly the red mid-rib. *DILL.*

H. Shoots upright, branched, leafy: leaves oblong-egg-shaped, acute, tiled: capsules egg-shaped: lid tapering to a point. *curtipendulum.*

*Dicks. h. s.—Dill.* 43. 69.

From two to four inches or more in length. Wide spreading, much branched, rigid. Leaves ending in a sharp hair-like point, closely tiled, broader and more dense at the ends of the shoots, so as to give them a blunt club-like appearance. Fruit-stalks hardly half an inch long, mostly two together, upright. Capsules cylindrical at first, and upright; when ripe egg-shaped and pendent. Lid short, beaked. Involucrum rising nearly up a third of the fruit-stalk. *WEIS.* Recumbent, matted together. Shoots thick, rigid, irregularly branched. Leaves green, numerous. Involucrum long, pointed. Capsules yellowish. *DILL.*

On the trunks of beeches, in woods. On stumps in Enfield Forest, near Southgate, and in Yorkshire. On large stones on the Marlborough Downs, Wiltshire; and on the rocks of Snowdon. *DILL.*

P. Feb.—April.

H. Shoot creeping, branched; leaves egg-spear-shaped, *atro-virens*, limber; capsules inversely-egg-shaped, fringed, drooping. *Dicks.* ii. 10.

*Dill.* 43. 67.

Slender, irregularly branched. Leaves very small, loosely disposed, dull green and pellucid when wet, opaque and blackish when dry. Involucrum pale, slender, fixed near to the origin of the branches. Fruit-stalks blackish. Capsules small, black. Lids deciduous. *DILL.*

Woods at the roots of trees, Scotland.

G. (1) Shoots crowded: capsules upright.



- sericeum. H. Shoots branched, creeping; leaves oblong, hair-pointed, tiled, capsules cylindrical; lid taper-pointed, bent.  
*Hedw. stirp. iv. 17-Dill. 42. 59-Curt. 126-H. or. xv. 5, rou*  
*4. 25-Vaill. 27. 3. a. b.-Gars. 639.*

Grows so firmly to the trunks of trees that it can scarcely be taken away entire. LINN. Shoots long, creeping, crowded, greatly branched. Branches short, roundish. Leaves slender, very closely tiled, ending in long hairs. Fruit-stalks half to one inch high, lateral, crowded. Involucrum short, thick, scaly. Capsules long, nearly cylindrical, but thickest at bottom, upright. Mouth narrow, fringe white. Lid beaked. Veil pale. WEIS. Branches mostly pointing one way. Leaves soft, shining. DILL. With two or three ribs, which distinguish it from the *H. plumosum*.

*Leskea sericea*. HEDW. On the ground on dry banks, trunks of trees, and walls. P. Sept.—April.

- myosu'ron. H. Shoots very much branched, awl-shaped, crooked, tapering upwards and downwards.

*Hedw. stirp. iv. 8-Dill. 41. 50-H. or. xv. 5. 27-Vaill. 28. 4.*

Stem two to four inches long; branched towards the end. Leaves closely tiled, egg-spear-shaped, hair-pointed. Involucrum short, slender, scaly. Capsules upright or leaning. WEIS. Shoots thin, creeping, sending out thready brown roots. Branches numerous, cylindrical, tapering at each end. Leaves crowded, egg-shaped, pointed, smooth, shining, pressed to when dry, rather standing out when fresh. Involucrum slender; scales straight, longer than the leaves. Fruit-stalks reddish, half or three quarters of an inch long. Capsules cylindrical, upright, tawny when ripe. DILL.

*Hypn. myosuroides*. HEDW. *H. myosuroides*  $\beta$ . HUDS. and Bot. arr. ed. ii. At the roots of trees, and on large stones in woods. Jan.—March.

G. (2) Shoots crowded: capsules leaning.

- myosuroides. H. Plant creeping, very much branched; branches cylindrical; leaves egg-spear-shaped, hair-pointed, upright, tiled; capsules cylindrical.

*Dill.* 41. 51—*H. ox.* xv. 6, row 3. 3—*Vaill.* 27. 6.

Pale green. Stem-leaves almost 3-cornered. *DILL.*

Woods at the roots of trees, and on stones and rocks. [*Bungay, Suffolk. Mr. STONE.*] P. Jan.—March.

Var. 2. Leaves dark green, shining, hair-pointed.

*Dill.* 41. 53.

Leaves soft, dark green, shining, ending in hairs, which appear grey and reflected when the plant is dry. *DILL.*

On old walls, as of Westham Abbey, near Stratford, Essex; and on rocks on Emott pastures, Yorkshire. *DILL.*

*H.* Shoots creeping; branches thread-shaped; leaves like serpens. bristles; capsules cylindrical, crooked; lid taper-pointed.

*E. bot.* 1037—*Dill.* 42. 64—*Vaill.* 28. 2, 6, 7, 8—*H. ox.* xv. 5, row the last. 21, p. 625—*Burb.* iv. 63. 2.

Shoots on the ground six inches, on trees two inches long. *NECK.* Shoots abounding with thick set slender fibres forming broad patches, closely adhering to the earth. Branches very slender. Fruit-stalks numerous, upright. Capsules cylindrical, leaning. Lid pointed. Mouth fringed. *WEIS.* Branches numerous, short, generally simple. Leaves too small to be distinctly seen by the naked eye; green, not shining. *Involutrum* small, hairy. Fruit-stalks an inch high, or more, fine purple. Capsules long, straightish. Veil upright, broad at the base, silvery, shining. *DILL.*

*Creeping White-veiled Hypnum.* On the ground under hedges, on the trunks of trees, especially young ones, on wood, stones, and sometimes on old bones. *DILL.* On rotten wood, and in wells. *LIGHTFOOT.* P. March—April.

*H.* Shoot creeping; branches crowded, upright; leaves veluti'nuni. awl-shaped.

*Dill.* 42. 61—*Happ.* iii.—*Hypn.* 6—*Fl. dan.* 475—*Vaill.* 26. 9.

Leaves hairy at the end. Fruit-stalks lateral, an inch long. *Involutrum* scaly, inclosing the thick base of the fruit-stalk.

*Capsules* cylindrical, or egg-shaped. *Lid* conical, short. WEIS. *Shoots* crowded, interwoven, firmly adhering to the earth and the bottom of trees by the rust-coloured woolly fibres. *Stem-leaves* broader than the branch-leaves. *Involucrum* short, hairy. *Lid* blunt. DILL.

At the roots of trees, in woods, and hedges, in shady places and barren pastures. P.

*Capsules* appearing in autumn, and coming to perfection in Feb. and March.

Var. 2. Smaller, shorter, of a paler green. *R. Syn.*

*Shoots* seldom more than three or four lines long. *Leaves* egg-shaped. NECK.

*clavellatum*. H. Creeping; branches upright, greatly crowded; capsules bowed; beak bent.

*Dill.* 85. 17.

*Fruit-stalks* twice as long as the branches. NECK. *Shoots* five to seven inches long, stiff, growing in dense patches tiled one upon another. *Branches* upright, or trailing, on opposite sides of the shoot, short, rigid, two or three lines long, and nearly one broad; those in the middle the longest. *Leaves* hairless, very entire. *Fruit-stalks* lateral, four or five lines long, inclosed at the base by an involucrum. *Capsules* a line in length. *Lid* very sharp. *Veil* smooth, a line long, reaching half way. POLLICH. Fixed by slender rust-coloured roots to the bark of trees. *Leaves* small, crowded. *Capsules* roundish. *Lid*, beak crooked. *Veil* brownish, broad at the base, suddenly tapering to a point. DILL.

On the dead branches and trunks of trees.

P. Dec.—Feb.

## HEPATICÆ.

**JUNGERMAN'NIA.** *Fruit-stalk* naked; capsule 4-valved; seeds roundish.

Obs. Many of the species are beautiful microscopic objects. For a fuller account of the parts of fructification, see Vol. 1. p. 364, and 389.



## SUBDIVISIONS OF JUNGERMANNIA.

- A. Plant unbranched, and without a mid-rib.
- B. 1. Leaves winged; fruit-stalks terminating.
- 2. Leaves winged: fruit-stalks lateral, or at the base.
- C. 1. Leaves winged; leaflets with appendages; fruit-stalks terminating.
- 2. Leaves winged; leaflets with appendages; fruit-stalks lateral, or at the base.
- D. Shoots tiled with leaflets.

A. Plant simple, without a mid-rib.

- J. A little leaf growing upon a large one.

epiphylla.

Dicks. h. s.—Hedw. theor. 21. and 22, and 23—E. bot. 771—Schmid. jung. f. 1 to 6—Dill. 74. 41—Fl. dan. 359—Happ. i. jung. 1—Mich. a. Marsilea. 1—Col. ecphr. i. 331. 3—Park. 1314. 5—Mull. frid. 2. 6 and 5.

Leaf variously scalloped and curled at the edge, pale green, firmly fixed to the mud by fibres from its under side. WEIS. Fruit-stalks hollow, two inches high. Scop. Bears its fruit in the spring, but flowers in autumn, the barren flowers appearing like dots on the older leaves, and the fertile ones in the cylindrical sheaths. Involucrum of one leaf, irregular, wrinkled. Germen globular, smooth, on a very short fruit-stalk, which is ensheathed. Lower part of the involucrum fixed in a kind of groove. Style very short. Filaments on the germen of no determinate number. Mr. KNAPP. Leaf short, roundish, moderately broad; segments blunt, shallow, fine green, pellucid. In winter a dark green head appears upon the middle of the leaf. In spring this head breaks forth from a valve on the surface of the leaf, circular and open at the top, afterwards cut into four shallow segments. Out of this the fruit-stalk rises, growing rapidly to the height of one and a half or two inches, white, pellucid, supporting a dark green globe which opens into four brownish and roundish segments, discharging a yellow brown powder mixed with fibres. This being done, the old leaf dies, and one or more young ones shoot out. DILL.

[Ellingham Fen, near Bungay, Suffolk, near the direction post. Mr. STONE.] P. March—April.



pusil'la.

J. Shoot mostly divided into winged clefts; lobes tiled involucre plaited.

Dill. 74. 46.

*Leaf* simple, very short, slightly divided into winged clefts. *Lobes* tiled. *Involucre* bell-shaped, plaited on one side. *Head* before it expands black. LINN. *Leaf* deeply divided into strap-shaped lobes, which again are sometimes forked. *Lobes* blunt, thick, flat, ascending. *Fruit-stalks* often in pairs. LEERS. About half an inch long. POLLICH. *Capsules* round, black, shining; valves roundish, finely toothed. DILL.

Grows in patches; of a most beautiful light pellucid green. *Fruit-stalks* one and a half inch high. Mr. STACKHOUSE. Shady lanes and banks, and wet places on heaths near Woolwich. DILL.—Wray Wood near Castle Howard, Yorkshire. HUDSON.

P. March to June—Oct.

furca'ta.

J. Shoots strap-shaped; branched; the ends forked and bluntish.

Hedw. theor. 19, and 20—Dill. 74. 45—Vaill. 23, 11—Mich. 4. 4.

*Plant* hardly one inch long. SCHOLL. *Leaves* flat, greenish. *Fruit-stalks* seldom more than two or three lines long. *Involucre* globular. *Capsule* nearly globular, reddish brown. In a young state it is often found amongst Mosses on trees, of a pale yellow. It is then very brittle, and on handling falls into a yellow powder, greasy to the touch. WEIS. Fringed at the edge. *Involucre* and *Capsules* hairy. Both on fruit-bearing and barren plants on the mid-rib underneath the leaves, are found hemispherical or kidney-shaped bodies, a little hairy, becoming powdery. LEERS. In stony shady places where it thrives well, it grows in tufts, and the plants support one another nearly upright, but when scattered amongst other Mosses on trees or on the ground it creeps. *Leaves* flat, compressed, very thin, pale green, pellucid with a distinct vein running through the middle, more or less lobed, trifid or bifid at the end; lobes blunt. DILL.

On the ground, on rocks, and in woods on the trunks of trees; DILL.—and wet shady places. HUDSON.—[Bungay, Suffolk. Mr. STONE.]

P. April.

sinua'ta.

J. Shoot doubly wing-cleft, flat, indented, open, ending in two unequal lobes. DICKS. ii. 16.

*Dill.* 74. 44—*Mich.* 4. 3.

*Leaves* permanent deep green, thin, pellucid, flat, cut into winged segments. *DILL.* Seems to be proliferous. *Leaves* lying one upon another, in which way it appears to increase till it has covered a large patch of rock. When first taken from the water it has a strong and, to me, an agreeable scent. I have never found *fructifications*, though I have examined it at different times of the year. I suspect they have never yet been found in England. *Mr. Wood.* (In April, 1801, I was so fortunate as to detect a plant in fruit at Elm Cragg, Well. *HAILSTONE* in *WHITAKER'S Craven, E.*)

At the head of Elm Cragg Well, under Bell Bank, near Bingley, Yorkshire. *DILL.*—Plentifully at the head of a spring in Middleton Wood, two miles from Leeds, on rocks and stones entirely under water. *Mr. Wood.*]

J. Leaf oblong, indented, slippery.

pin'guis,

*E. bot.* 185—*Schmid.* 35—*Dill.* 74. 42—*Mich.* 4. *Marsilea.* 2—*Pluk.* 42. 2—*Vaill.* 19. 4.

Fertile plant smaller and more jagged, the others growing close together, and supporting each other become upright. *DILL.* in *R. Syn.* 110. *Fruit-stalks* with a sheathing involucre, white, pellucid, from one to three inches high. *Capsules* egg-shaped, black, shining, opening with four valves. Other leaves of a longer form not bearing capsules are set with green warty substances about the middle. *WEIS.* *Involucrum* at first inconspicuous, afterwards long, tubular, entire, pale green. *Fruit-stalks* white, one to two inches long, *DILL.* from the hollow indentures of the leaf. *Involucrum* long, cylindrical.

Marshy places and Bogs. [Bungay, Suffolk. *Mr. Stone.*] April.

J. Shoots with doubly winged clefts.

multifida.

*Schmid.* 55—*E. bot.* 186—*Dill.* 74. 43.

*Leaves* pale green; clefts blunt. *Involucrum* at the base of the leaves, and at the edges of the segments; cylindrical. *Fruit-stalk* about an inch long from the base of the leaves. *NECK.*

*Leaves* flat, pellucid, succulent, greasy to the touch, pale yellow green; those without fruit-stalks the most deeply divided. Seldom exceeding half an inch in length, it would with difficulty be found, being mostly covered by other Mosses, did it not grow in quantities together. WEIS. *Fruit-stalk* white. *Capsules* dark green, shining. DILL.

Woods and moist shady places. Caen Wood, near Highgate, and Charlton, Kent; DILL.—and about Hampstead. HUDSON. P. April—May.

B. (1) *Leaves winged; fruit-stalk terminating.*

*asplenioïdes*. J. Leaflets egg-shaped; somewhat fringed.

*Fl. dan.* 1061—*Hedw. theor.* 16. 17. 81. to 88—*Dill.* 69. 5—*Mich.* 5. 3. oo.

*Shoots* three or four inches long; pale green. *Leaves*, upper edge fringed with little teeth, alternate. *Fruit-stalks* terminating, an inch long, rising out of a sheathing involucre. *Capsules* egg-shaped, purplish black, shining. WEIS. *Trailing*, sometimes branched. *Leaves* pellucid, pale green, without veins. I have never observed any roots. DILL.

Road sides and on trees, in woods and wet shady places; also near springs and rivulets, when it is sweet scented. (It grows plentifully on the sides of the Holy Well of St. Winifred, in Flintshire. E.) [Earsham and Sexton Woods, near Bungay, Suffolk. Mr. STONE.] P. Feb—April.

Var. 2. Leaflets more crowded.

*Fl. dan.* 1061—*Dill.* 69. 6—*Mich.* 5. 1. and 2—*Vaill.* 19. 7—*H. ox.* xv. 6. row 2. 42—*Scop.* 62. 1337, instead of 1338, at ii. 7. 321.

*Plant* from one to two inches long. *Fruit-stalks* twelve lines long, terminating. NECK. *Shoots* more branched than in one, and shorter. *Leaflets* smaller and more crowded. WEIS. In the same situations with var. 1.

Var. 3. Leaflets not fringed.

This particular variety was found by Mr. STACKHOUSE growing under the water of the celebrated spring called Holywell, in Flintshire.



*J.* Leaflets very entire, egg-shaped, pointing 2 ways; male scale'ris.  
fruit-stalk terminating.

*Dicks.* 8. 5—*Dill.* 31. 5—*Schmid. jung.* f. 17. and 18.

Shoots creeping and striking root; terminating in powdery globular substances. *Scop.* Branched or unbranched, forming compact patches of a beautiful shining brownish green, one shoot lying on another. *Leaves* in two rows, minute, roundish, blunt, very entire, a quarter of a line in diameter. *Globules* terminating, sitting. *FOLLICH.* Creeping on the ground, one or one and a half inch long. *Leaves* tender, pellucid, pale green, in pairs. Fruit-bearing branches short, the leaves alternate. *Capsules* or globules small, green, of short duration. *DILL.* Shoots creeping, tapering each way, with appendages underneath; leaflets roundish egg-shaped, sometimes slightly notched at the end; sheathing involucre below the shoot, cylindrical, hairy, fixed in the earth. *Fruit-stalk* near an inch and a half high. *DICKSON.*

*J. trichomanes.* *LIGHTF.* *Mnium trichomanes.* *LINN.* *J. trichomanis.* *DICKS.* *Scop.* and *Bot. arr. ed. ii.* Woods, hedges, and wet shady heaths. P. April—Oct.

*J.* Shoots spear-shaped; leaflets very entire. lanceolá'ta.

*E. bot.* 605—*Dill.* 70. 10—*Mich.* 5. 6 and 7—*Happ.* *jung.* 2.

Grows in large patches. *Shoots* hardly one inch long, simple, or divided into two or three branches. *Leaflets* alternate crowded at the ends of the branches. *Fruit-stalk* near half an inch long, white. *Capsule* greenish brown or blackish. *WEIS.* *Shoots* sometimes branched. *Involucre* slender, pallid, cloven into segments. *DILL.*

Moist shady banks.

Feb.—March.

*J.* Shoots trailing, branched; leaflets egg-shaped, with two bidenta'ta. teeth; stipulæ spear-shaped, with four teeth.

*E. bot.* 606—*Schmid. jung.* f. 14—*Dill.* 70. 11—*Fl. dan.* 888—*Vaill* 19. 8—*H. ox.* xv. 6. row 2. 47—*Mich.* 5. 12—*Pet.* 13. 4.

*Involucre* terminating, obscurely 3-cornered. *Fruit-stalk* whitish, tender, an inch long. *NECK.* *Shoots* one to three inches long, generally branched. *WEIS.* *Leaflets* with two teeth



CRYPTOGAMIA. HEPATICÆ. *Jungermannia*. (B. 1.)

at the end forming a half moon. SCHOLL. *Leaves* pale green, pellucid, alternate, fixed by a broad base to the rib, pointing upwards. *Fruit-stalks* leafy at the base. *Capsules* black brown.

DILL.

Woods and moist heaths, and shady banks. Oct.—Dec.

Var. 2. Smaller.

Schmid. 64. 1—Dill. 70. 12—Mich. 5. 13.

*Leaflets* shorter, blunter, and less deeply cut than in the preceding.

*Jung. inflata*. HUDS. and Bot. arr. ed. ii. Shady moist places on heaths and in woods. Nov.—March.

quinque-  
denta'ta.

J. Shoots branched; leaflets with five teeth.

Dill. 71. 23—Mich. 6. 2, larger than our plants.

*Involucrum* with five teeth, a line or more in length. NECK. Shoot sometimes simple, taking root as it creeps along. *Capsules* appear in autumn; it blossoms in the spring. *Leaves* 4-sided, teeth or scollops from one to six. Shoots crowded, one inch to one inch and half long, in general branching into forks. WEBER. Creeping, crowded, sometimes branched. *Leaves* pellucid, numerous, broadest at the base, pleasant green, lower ones ending in three sharp teeth, upper ones in four or five. *Fruit-stalk* terminating. *Involucrum* toothed, angular. *Capsule* black. DILL.

Woods in wet shady places. About Tunbridge, and in the West of Yorkshire. [In the ascent to Ffynnon freck p. Llanberris. Mr. GRIFFITH.] P. April.

macrorhi'za. J. Shoots upright, branched; leaflets alternate, slightly notched, open. DICKS. ii. 16.

Dicks. 5. 10.

*Leaves*, the uppermost purplish. Root large, branched. DICKS.

Higher mountains of Scotland. [Crib y Ddeseil. Mr. GRIFFITH.]

sphæro-  
ceph'ala.

J. Leaflets with two teeth; fruit-stalks terminating or lateral supporting a barren globular flower.

Dill. 31. 6.

Small, whitish, creeping, leaves pointing two ways. *Leaflets* notched at the end, and the segments sharp-pointed. *Scor.* *Roots* extremely slender and numerous from the mid-rib, and fixing the plant firmly to the ground. *Fruit-stalks* short, terminating and lateral. *Capsules* or powdery heads, pale green. *Leaflets* tender, pellucid, cloven at the end, opposite. I have seen no other capsules than these powdery heads. DILL.

*Mnium fissum*. Linn. *Jung. fissu.* Scop. and LIGHTF. In wet places about Highgate, and on Shooter's Hill near Eltham, and especially in a rivulet running through Oldfall Wood, between Highgate and Muscle Hill. Scotland. LIGHTFOOT.

Feb.—April. DILL.—P. March—Oct. Huds.

B. (2) *Leaves winged*: *fruit-stalks lateral, or at the base.*

J. Shoots taking root; fruit-stalks lateral; leaflets roundish, sphagnum, very entire, tiled, pointing one way. Dicks. 6.

*Dicks. 1. 10.*

Shoots an inch or more in length; sometimes branched, sometimes not, bending in various directions, and here and there putting forth fibrous roots. *Leaves* roundish, brownish yellow, convexo-concave, all pointing one way, though placed in two rows, alternately lying on each other. *Capsule* one or two, issuing from the same side of the shoot near the top or the bottom. *Fruit-stalk* pellucid, white, a quarter of an inch high. *Sheath* whitish, oblong, brownish at the top. *Capsule* small, roundish, brown, but rarely seen. Differs from the *J. polyanthos*. Linn. in the leaves being of a brownish yellow, pointing one way, and also in the fibrous roots. DICKSON.

Marshy places, frequently adhering to *Sphagnum palustre*, near Croydon, Surrey. May.

J. Fruit-stalks lateral; leaflets broadish, lopped, with three angulosa, blunt teeth; capsule bell-shaped. Dicks: 7.

*Dicks. h. s.—Schmid. 22—Hedw. theor. 18. 89 to 92—Mich. 5, 10.—Dill. 71. 22. C. D. E.*

Shoots simple or branched. *Leaves* flat, green, pellucid, ending in three blunt teeth, distinct from *J. trilobata*, the pinules of which are eared and the leaflets smaller. DICKSON.

Moist shady places. In Wales. DILL. Sept.

J. Leaves flat naked, strap-shaped, viticulosa.

*Dill. 69. 7—Vaill. a. b. between f. 7 and f. 2—Mich. 5. 4.*

*Shoots* three inches long; branches one or two inches. *Leaflets* egg-shaped, the edges fringed and bent back, so that they appear convex. *Fruit-stalks* on the mid-rib, mostly towards the lower part of the shoot, and at the origin of the branches; an inch long, or more. *Involucrum* cut into segments. *Capsule* roundish, black, shining. WEIS. DILL.

Shady ditch banks, and woods in wet places. About Slingford, Sussex. DILL.  
P. March—April.

polyan'thos. J. *Leaflets* very entire, tiled, convex.

*Dill.* 70. 9—*Mich.* 5. 5.

*Shoots* about one inch long, winged. *Leaflets* alternate, egg-shaped, with a blunt point. *Fruit-stalk* half an inch high, from the mid-rib and the origin of the branches. *Capsule* brown red, egg-shaped, WEIS. short, branched, stiff. *Leaflets* roundish, short, thin, pellucid, tiled. *Involucrum* white, short, 4-cleft. In the figure of *Micheli* the leaves are ill done, and roots are erroneously added to the flower. DILL.

Woods, moist shady banks, amongst moss, and on the sides of rivulets. Lead Hill, and between Dorking and Cold Harbour, Surrey, in marshy places.  
P. March—April.

bicuspidata. J. *Fruit-stalks* lateral; leaflets with two teeth.

*Schmid.* 63—*E. bot.* 281—*Dill.* 70. 13—*Mich.* 6. 17—*Schmid. Jung.*

*Fruit-stalks* six to eight lines long. *Capsules* oblong, brown. DILL. *Shoots* less branched than in the *J. bidentata*, and more limber, from half to one inch long. *Involucrum* two lines long, at the origin of the branches. WEIS. *Leaflets* with two teeth at the end, forming an acute angle. SCHOLL.

Shady places and moist woods.

P. March—April.

minuta. J. *Shoots* upright, branched; leaflets with appendages underneath; leaves roundish. DICKS. ii. 13.

*Dill.* 69. 2.

Very slender, branched. *Leaflets* not distinguishable by the naked eye, alternate, roundish, pellucid, in single rows. *Roots* very fine woolly filaments fixed to the back of the mid-rib. DILL.

Amongst moss in the Highlands of Scotland. [Summit of Carnedd Llewelyn. Mr. GRIFFITH.]

J. Fruit-stalks lateral: sheath sphaeroidal; leaves cloven, ventricosa.  
DICKS. ii. 14.

*Mich. 5. 15—Dill. 70. 14.*

*Leaves* more deeply cloven than represented by Micheli.  
DICKSON.  
Woods.

J. Shoots upright, branched; leaflets inversely egg-shaped; spinulosa.  
sharply toothed. DICKS. ii. 14.

*Dill. 70. 15.*

*Fructifications* not hitherto discovered. DICKSON. *Shoots* upright, or reclining, but not creeping; branches numerous. *Leaves* alternate, not closely set, dull green, pellucid, the upper ones smaller, with two or three teeth at the end; lower ones with more teeth. DILL. *Teeth* acute, mostly on one side the leaflet.

On Snowdon. DILL. On the mountains of Scotland. DICKSON.  
[On Crib y Ddeseil, and Cader Idris. Mr. GRIFFITH.]

J Shoots creeping, very much branched, thread-shaped; pauciflora.  
fruit-stalks lateral; leaves bowed in, deeply divided;  
sheaths conical, remote. DICKS. ii. 15.

*Dicks. 5. 9.*

*Leaves* alternate, remote, cloven down to the base. *Segments* equal, strap-awl-shaped, bluntish, concave, transparent, in the interstices opaque. *Fructifications* solitary, remote. *Sheaths* conical. *Fruit-stalks* as long again as the involucre. Nearly allied to the *J. multiflora*, and at first sight greatly resembling it, but differs from it in the number of its fruit-stalks, &c.  
DICKSON.

Near Croydon, growing on *Sphagnum palustre*. DICKSON.  
Yorkshire. Mr. TEESDALE.

C. (1) *Leaves* winged: leaflets with appendages: fruit-stalks terminating.

J. Shoots doubly winged above; leaflets roundish, very undulata.  
entire, waved.

*Vaill. 19. 6—Dill. 71. 17.*



My specimen accords with Vaillant, but not entirely so with Dillenius's. *Leaves* pointing from opposite lines, expanding, near, not at all tiled, but disposed in a double row on each side, alternate, distinct, equal, those underneath not being smaller or united with those above, all slightly waved. LINN. *Leaflets* roundish, convex above, concave underneath, connected by a small appendage near the rib, with the leaflet above it. *Involucrum* terminating, oblong, green. *Fruit-stalk* white, one inch long. *Capsules* roundish. WEIS. DILL.

Shady places.

P. March—April.

nemoro'sa. J. Shoots doubly winged above; leaflets fringed.

*Hedw. theor.* 15—*E. bot.* 607—*Dill.* 71. 18—*Mich.* 5. 8.

*Leaflets* broad at the base, and enveloping the mid-rib, so that there appears no interstice between the leaflets and the appendages or coloured scales placed above them. WEIS. *Plant* mostly about one and a half inch long, branched or unbranched. *Leaflets* oblong, numerous, green, pellucid. *Involucrum* terminating, broad; at first leaning. DILL.

Woods and moist shady places in Westmoreland.

P. March—April.

resupina'ta. J. Shoots doubly winged above; leaflets finely scalloped, tiled, circular.

*Dill.* 71. 19.

Very rarely flowers. Underneath resembling a step-ladder. *Plant* two inches long. *Leaflets* (if magnified) appear edged with a double fringe, with appendages on the upper side. NECK. *Stems* forked, or imperfectly winged, lying one on another, rigid, brittle. *Leaves* in two rows; entire at the sides, but with three or more minute teeth at the end. POLLICH. Grows crowded together; reclining. Barren plants longer than the fertile ones. *Leaves* roundish, appendages standing out, so that the plant has a crispid or curled appearance. *Involucrum* short, distended, toothed. *Fruit-stalks* near an inch high, white, on short shoots near the base of the plant. DILL.

In clefts of rocks, and on turfy heaths.

P. April.

albicans. J. Doubly winged above; leaflets strap-shaped, bowed, back,

*Dill.* 71. 20—*Vaill.* 19. 5.

*Shoots* one to two inches long, not creeping, but reclining. **WEIS.** Forming dense patches, one shoot lying on another. *Leaflets* two-rowed, half a line long, and a quarter broad, very entire; ending in a blunt point. Besides these larger leaves, there is another set only half the size on the upper side of the mid-rib, one at the base of each larger leaf. *Involucrum* cylindrical, white, terminating. Barren stems reddish at the ends, and containing minute greenish globules filled with a powder. **POLLICH.** Crowded together, simple or branched; whitish when dry. **DILL.**

Woods and wet shady places.

P. March—April.

J. Somewhat cylindrical, rather upright; leaflets concave, roundish. cochleari-  
formis.

*Dill.* 69. 1—*Mich.* 5. 16, but more evidently fringed than in our plants.

*Leaflets* pointing from two opposite lines, nearly egg-shaped, transparent, smooth, embracing the stem, pointed, each furnished with a very small earlike appendage. I have never seen any other than male plants. **LINN.** *Stems* hollow, reddish. **SCOP.** *Shoots* creeping, strap-shaped, the ends rising upwards. *Leaflets* about a line in diameter, flat. **POLLICH.** Varies greatly in appearance. The young plants in wet places crowded, upright. *Leaves* very small, roundish, nearly flat, pellucid, alternate, without appendages. When older, the leaves are larger, more closely set, convexo-concave, with scaly appendages at the base, resembling the leaves in shape. In some plants when fully grown, the leaves are roundish; in others spoon-shaped; and in another variety gathered on the banks of mountain lakes, I have found the leaves green, pellucid, not crowded, almost embracing the stem. *Shoots* sometimes branched, from one inch to a foot long when growing in running water. Have not found it in flower. **DILL.** Have frequently found it with fertile heads. **HUDSON.** I have found the capsule filled with ripe seeds, but closely enveloped by the leaves at the extremity of the plant, and probably never rising above them.

Since writing the above I have received a specimen from Mr. Griffith in fruit, the fruit-stalk more than an inch long. He found it for the first time in this state, last summer, when the hills were dry or nearly so, and thence concludes that it only

CRYPTOGAMIA. HEPATICÆ. *Jungermannia*. (C. 2.)

flowers in very dry seasons. Possibly the very tender and delicate fruit-stalk may be destroyed in rainy seasons.

*Jung. purpurea*. SCOP. LIGHTF. and Bot. arr. ed. ii. *Mnium Jungermannia*. LINN. Bogs, rivulets, and cascades in mountainous situations, and in ditches and turfy heaths. On Cader Idris, Snowdon, and Glyder. DILL. [In moist peat earth on a mountain called Cowsand, and on the sides of hills in the Forest of Dartmoor, Devonshire. Mr. NEWBERRY. In all the rills near Snowdon. Mr. GRIFFITH.] P. March—Aug.

Var. 2. Leaflets very entire.

Smaller than the preceding, upright, green, not purple. Seems to be the variety mentioned by Dillenius as growing in bogs. Specimens from J. W. GRIFFITH, Esq.

C. (2) *Leaves winged: leaflets with appendages: fruit-stalks lateral, or at the base.*

ova'ta,

J. Shoots creeping, branched; leaflets egg-shaped, alternate, with appendages underneath; sheathing involucre inversely egg-shaped. DICKS. iii. 11.

Dicks. 8. 6.

*Fruit-stalks* terminating and lateral, *Involucre* ragged at the top. DICKSON. On barren heaths.

triloba'ta.

J. Shoots doubly winged underneath; leaflets squarish, slightly 3-lobed.

Dill, 71. 22. A. B,

About one inch long, trailing, branches distant. *Leaflets* with three to five shallow clefts at the end. *Involucre* about two lines long, terminating. *Fruit-stalks* very short. A. E. S. Sometimes branched, creeping. *Leaves* flat, green, pellucid, with three blunt teeth at the end. I have not found it in flower. DILL.

Wales. DILL. On Crib y Ddeseil near Llanberris. HUDSON. P. March—April.

rep'tans.

J. Shoots doubly compound: fruit-stalks lateral: leaflets 4-cornered, snipt towards the end: stipulæ 4-cleft.

*E.*, bot. 608—Schmid. 63—Dill. 71. 24—Schmid. *jung. f.* 8. 13.

*Fruit-stalk* from the base. *Capsules* blackish, shining. DILL.  
*Appendages* underneath the leaflets. NECK. Tender, creeping,  
 irregularly branched, limber, about one inch long. *Leaflets*  
 very minute, ending in three or four little teeth. *Involucrum*  
 3-sided, whitish, toothed. *Fruit-stalk* white, shining. *Capsules*  
 oblong-egg-shaped. WEIS. DILL.

Moist shady places.

P. Dec.—April.

J. Shoots creeping; branched; leaflets alternate, in pairs, multiflora.  
 bristle-shaped, equal. LINN. Leaf simply winged,  
 flowering at the base. HUDS. 510.

Dill. 69. 4.

Shoots thread-shaped, half to one inch long. *Leaflets* short.  
 WEBER. *Involucrum* central, numerous, crowded, white, 4-  
 cleft. *Fruit-stalks* slender, white, long. *Capsules* large, red-  
 dish brown. DILL.

Shooter's Hill, near London. DILL.

March. HUDS.

#### D. Shoots tiled with leaflets.

J. Shoots creeping; leaflets doubly tiled, with little scales complana'ta.  
 underneath; branches of an equal breadth through-  
 out.

*Fl. dan.* 1062—Curt.—Dill. 72. 26—Mich. 5. 21.

*Leaflets* circular. *Fruit-stalks* terminating, very short. NECK.  
 From one to two inches long, flat, irregularly branched, adher-  
 ing close to the bark of trees in broad patches; soft to the touch  
 and flaccid when wet. *Fruit-stalk* hardly a line long, rising  
 from the origin of the branches as well as from their extremities,  
 out of a scaly involucrum, which is lopped at the end. *Capsule*  
 small, black, of short duration. WEIS. DILL. Without visible  
 roots. *Plant* pale or yellowish green, tender, but hardly pellu-  
 cid. *Fruit-stalks* solitary or in pairs. DILL.

Trunks of trees, in hedges and thickets, flourishing most in  
 a wet situation.

P. Jan.—April.

J. Shoots creeping; leaflets doubly tiled, with little scales dilata'ta.  
 underneath; branches broader towards the end.



*Dill.* 72. 27—*Vaill.* 19. 10—*Mich.* 6. 6—*Neck. meth.* 1. 3, at p. 273.

*Leaflets* circular, in a double row, *NECK.* convex, smaller, and *shoots* narrower than in the *J. complanata*. *Involucrum* terminating the branches, 3-cornered; *NECK.* colour dark green, or reddish. *Fruit-stalk* one line long. *WEIS. DILL.* *Shoots* strap-shaped, lying on one another, forming dense roundish patches. *Branches* distant, winged. *Involucrum* mostly terminating, half a line long. *Fruit-stalk* very short. *Capsule* minute, globular. *POLLICH.*

Trunks of trees, closely adhering to the bark.

P. March—April.

tamarisci-  
folia.

J. Shoots doubly compound; fruit-stalks terminating; leaflets roundish, with appendages underneath; stipulæ egg-shaped, notched.

*E. bot.* 1086—*Schmid.* 67—*Dill.* 72. 31—*Mich.* 6. 5—*Vaill.* 23. 10.

Greatly resembles *J. dilatata*, *NECK.* but the shoots are much longer, crowded and lying one upon another, more slender, more branched; *branches* of a uniform breadth, blunt at the ends, not closely attached to the tree on which it grows, but rather hanging down. The mid-rib is more exposed to view, and on the under side appears jointed, and covered with small scales cloven at the end. *Fruit-stalk* terminating, very short. *Capsule* brown yellow. *WEIS. DILL.* *Leaflets* circular, very entire. *Capsule* very minute, *POLLICH.* (appearing in March on short fruit-stalks, each from a terminal, inflated, lobed, granulated sheath. *E. bot. E.*)

*Tamarisk Jungermannia.* Trunks of trees and rocks. (A rare plant in Lancashire, but found in a fir wood near Childwall. Mr. SHEPHERD. E.)

P. Feb.—March.

excisa.

J. Shoots creeping, branched; fruit-stalks terminating; leaves tiled, concave, notched at the end; sheathing involucrum inversely egg-shaped. *DICKS.* iii. 11.

*Dicks.* 8. 7:

*Shoots* cylindrical, closely tiled with leaves. *Involucrum* toothed at the top. *DICKSON.*

Moist shady woods.

J. Shoots trailing, tiled underneath; leaflets heart-shaped, platyphyl'la. acute.

*E. bot.* 798—*Vaill.* 19. 9—*Dill.* 72. 32—*Mich.* 6. 3 and 4—*H. ox.* xv. 6, row 2. 44—*Happ.* iii. *Jungermannia*.

*Shoots* very much branched. *NECK.* *Branches* spreading.

*SCHOLL.* About a finger's length, growing in close patches; doubly winged. *Leaflets* egg-spear-shaped, tiled in a double row, with appendages underneath. *WEIS.* *Fruit-stalk* short, lateral and terminating. *Involucrum* blunt, compressed, about one line in height. *Capsules* minute, upright, smooth, shining, yellowish. *POLLICH.* Grows in large tufts on walls and trunks of trees one layer upon another, fixed only by the ends, irregularly branched. *Leaves* crowded, tiled, pellucid, thin, dark green, the edges and the ends turned down. *DILL.*

On trunks of trees, and on walls. [Old walls, Bungay, Suffolk. Mr. STONE.] P. March—April.

Var. 2. Leaves shorter and rounder. *HALL. n.* 1872. *LIGHTF.* 785.

*Dill.* 72. 33—*Mich.* 6. 1.

*Leaves* heart-shaped, rounder than in the preceding. Midrib entirely covered underneath by scales. *Branches* at right angles to the shoot. Have not seen it in flower. *DILL.*

Trunks of trees. *DILL.*

J. Shoots creeping, downy above; leaves entire, very cilia'ris. downy. *EHRHART.* *DICKS.* ii. 14.

*Dill.* 73. 35.

Primary branches alternate, secondary ones alternate likewise, but so closely set as to appear nearly opposite; larger and more numerous in the barren than in the fertile plants. *Leaves* pale green, woolly, extremely crowded, and very minute. *Involucrum* in the angles of the branches, long, woolly, straw-coloured. *Fruit-stalk* white, pellucid. *Capsule* oblong, black. *DILL.*

*Jung. Tomentella.* *DICKS.* Moist woods and heaths, and wet mossy places near rivulets in Yorkshire, Cumberland, and Westmoreland; in a small current of water which runs through Oldfall Wood between Highgate and Muzzle Hill, about Chichester, Sussex, and Dorking, Surrey. *R. Syn.* and *DILL.* In the Highland mountains near Aberfeldy. *DICKSON.* [On a dry sandy bank on Brome Heath near Bungay, Suffolk. Mr. STONE.] P. March—April,

va'ria.

J. Shoots nearly upright, tiled, pointing two ways; leaflets deeply divided.

*Dill.* 73. 35—*Mich.* 5. 9.

*Shoots* short, stiff, brittle; frequently with green or yellowish globules at the end. *Fruit-stalk* white, shining, five lines long, terminating. *Involucrum* egg-shaped, with four teeth. *Capsule* globular, black and shining. *POLLICH.* At first creeping, undivided, winged with leaves; when older, rising up, somewhat branched, the leaves surrounding the branches. *DILL.*

Woods and heaths in moist shady places. P. March—April.

pulcher'-  
rima.

J. Shoots creeping; leaflets doubly tiled; appendages underneath, fringed.

*Dill.* 69. 3.

*Branches* alternate, convex above, tiled with a double row of scales, and tiled with appendages underneath. *Leaflets* and *appendages* fringed, with the fringe bent back, whence its rough appearance; *upper leaves* often cloven. *LINN.* *Shoots* the length of a finger, winged and branched, the branches alternate. *Leaflets* very hairy. *Fruit-stalk* from the forks of the branches, thick, white, pellucid, one to two inches long. *Involucrum* hairy, long, straw-coloured. *Capsule* dark purple. *WEIS.* *Leaves* sometimes entire, sometimes cloven at the end, alternate, elegantly fringed with hairs at the edges and at the ends, pellucid when plunged in water. It grows in tufts, upright; the ends crooked; seldom found in flower. *DILL.*

*Jung. ciliaris.* Sp. pl. On heaths in England and Scotland. *DICKSON.* [Sides of Lochain y Gair. Mr. BROWN.] P. March.

adun'ca.

J. Shoots thread-shaped, bent at the ends; leaves expanding, pointing one way; fruit-stalks terminating, short. *DICKS.* iii. 12.

*Dicks.* 8. 8.

*Leaves* nerveless, cloven, points acute; three together, or rather pointing in three directions. *MR. GRIFFITH.* *Shoots* trailing, branched. *Leaves* tiled, but standing open; spear-strap-shaped, channelled, the point a little turned back. *Fruit-stalk* short, crooked. Sheathing *involucrum* short, roundish.

On shaded banks in the Highlands of Scotland. DICKSON.

J. Shoots cylindrical, upright; leaflets tiled on every side; julacea. flowers on fruit-stalks.

*E. bot.* 1024—*Fl. dan.* 1002. 2—*Dill.* 73. 38.

Brittle. *Fruit-stalk* terminating. *NECK.* Shoots slender, cylindrical, silky, from half to one inch high; sometimes forked. *Leaves* so closely compressed as hardly to be observable, which distinguishes it from every other species. *WEBER.* Grows in very dense tufts; shoots and branches cylindrical, and silky when fresh. Dull greyish green, and brittle when dry. *Fructifications* rare. *Capsules* small, red brown. *Fruit-stalk* short, white, rising out of a toothed involucre. *DILL.* Scales of the involucre cloven, membranaceous. *Leaves* when magnified cloven, not unlike those of *Jung. curvisolia*. *MR. GRIFFITH.*

*Silvery Alpine Jungermannia.* Wet rocks and by the side of rivulets on Cader Idris, Glyder and Snowdon, and the Highland mountains. [On rocks on the sides and tops of hills in Dartmoor, Devonshire. *MR. NEWBERRY.*] P. Sept.—Oct.

J. Shoots cylindrical, somewhat compressed, closely tiled, concinna'ta, compact; leaves convex and concave, smooth; flowers on fruit-stalks. *LIGHTF.* 786.

*Dill.* 73. 38, *J. julacea*, is spoken of by *Lightf.* as the best representation of it.

Grows matted in tufts, reddish brown above, pale green below. *Stalks* a quarter of an inch high, very slender, brittle when dry, closely tiled with leaves, thickest at the ends. *Leaves* undistinguishable by the naked eye, smooth, membranaceous at the edge, always pressed to. *Fruit-stalks* terminating, short. *Capsules* brown. *LIGHTFOOT.* Shoots compressed, but obscurely four-cornered. Scales of the involucre, entire, rounded, which distinguishes it from *J. julacea*. *MR. GRIFFITH.*

Is it not a variety of *J. julacea*? *HUPS.* 651.

Rocks on the Highland mountains frequent. [On Snowdon. *MR. GRIFFITH.*] Sept.—Oct.

J. Shoots cylindrical; leaflets awl-shaped, pointing one rupes'tris way.



*Dicks. h. s.—E. bot.* 1277—*Dill.* 73. 40.

The whole *plant* very short, being about one third of the length of a pin, blackish, upright, seldom branched. LINN. *Shoots* branched, dark green. *Leaflets* bent back. *Involucrum* cylindrical, not tiled as in the *J. alpina*. WEBER. Grows densely crowded together, short, naked below. *Leaves* very slender, reflected, dark green, blackish when dry, pointing one way. *Involucrum* very minute, terminating, reddish, not scaly. *Fruit-stalk* very short. *Capsules* very small. DILL.

*Dusky Rock Jungermannia*. On moist rocks on Snowdon and Glyder, Caernarvonshire; the North of England, and the Highland mountains. [Plentifully upon rocks on the sides and tops of hills in Dartmoor, Devonshire. Mr. NEWBERRY.]

P. March—Oct.

*tricophylla*. J. *Shoots* cylindrical; leaflets hair-like, equal.

*Schmid.* 42. 1 to 23—*Dill.* 73. 37.

*Shoots* only a few lines in length, closely surrounded by very slender leaflets, of a pale yellow green. *Fruit-stalk* terminating. *Involucrum* long, cylindrical, cloven. WEIS. When magnified the leaflets appear divided quite down to the base into three or four awl-shaped segments, composed of globular joints. *Fruit-stalk* half an inch long. *Capsules* black. LEERS. *Leaves* pale green, extremely slender. *Branches* numerous, irregular. DILL.

Turfy heaths near North Brierly, Yorkshire. RICHARDSON, in *Fl. Ang.* 516. P. April.

*alpina*.

J. *Shoots* cylindrical; leaflets egg-shaped, expanding; involucrum tiled.

*Dicks. h. s.—E. bot.* 1278—*Fl. dan.* 1002. 1—*Dill.* 73. 39.

*Shoots* half to one inch high, crowded together in tufts, branching into short forks. *Involucrum* terminating. *Fruit-stalk* seldom found; very short. WEBER. One to two inches long; cylindrical, not brittle. *Involucrum* scaly, light red, resembling the bud of the Beech tree. *Capsule* dark red. DILL.

*Chocolate Alpine Jungermannia.* Wet rocks on Snowdon and Glyder, Caernarvonshire, and bogs on Cader Idris. DILL. And on the mountains of the North of England. HUDSON. And of the Highlands. LIGHTFOOT. [On the top of Glyder; and Carnedd Llewelyn. GRIFFITH. P. April—Oct.

J. Shoots creeping, branched, cylindrical; leaves tiled, *curvifolia*, roundish, taper-pointed, cloven, the segments hooked. DICKS. ii. 15.

*E. bot.* 1304—*Dicks.* 5. 7.

The points of the leaves next to the involucre upright. DICKSON. (*Fruit-stalk* about half an inch high, whitish and tender. *Capsule* dark brown, splitting into four acute valves, as in other species. *E. bot.* E.)

*Curve-leaved Jungermannia.* Highlands of Scotland. [Many places in the ascent to Crib y Ddeseil from Llanberis. On the summit of Carnedd Llewelyn, also near Llyn Llumbren, Denbighshire. Mr. GRIFFITH.] (May. E.)

J. Shoots creeping, doubly winged above; fruit-stalk from *cine'ria*, the middle; sheath cylindrical; leaves rounded. DICKS. ii. 15.

*Mich.* 6. 18—*Dill.* 72. 28.

Grows creeping upon other mosses. *Shoots* short. *Leaves* round, grey, very small, tiled. If immersed in water and magnified, other secondary leaflets may be found underneath these. DILL.

Woods. Bagley Wood, near Oxford. DILL.

J. Shoot very short, unbranched; leaves tiled, circular, *pu'mila*, nearly opposite; fruit-stalk very long.

PLATE XVIII. f. 4.

Grows matted together. *Shoot* simple, about one-eighth of an inch high. *Leaflets* six to eight, circular, entire, tiled, nearly opposite. *Sheath* toothed. *Fruit-stalk* terminating, a quarter of an inch long, or more.

Sent by J. WYNNE GRIFFITH, Esq. who first discovered it on Cwm Idwel.

**TARGIO'NIA.** *Calyx* 2 valves, compressed, containing at bottom a capsule, nearly globular, many-seeded. See vol. I. p. 390.

hypophylla. T. Fructifications solitary; calyx open. DICKS.

*E. bot.* 287—*Mich.* 3, *Targionia*—*Dill.* 78. 9—*Buxb.* 1. 61. 4—*Col. ecphr.* 1. p. 331. f. 333.

Not larger than the little finger nail. Green, not pellucid; rough with white rising dots. *Leaf* heart-spear-shaped, at first green, afterwards dark purple, blackish underneath. *Fructification* at the end, on the under side, the size of a vetch. *Calyx* black; opening, containing the fruit covered with a yellowish skin, and filled with a yellowish pulp which rubs to powder between the fingers, and stains them. COLUMN. *ecphr.*

Heaths and sides of ditches near Dawlish Devonshire.

P. March—May.

sphærocar' T. Fructifications crowded together; calyxes perforated at  
pus. the end. DICKS. 8.

*E. bot.* 299—*Mich.* 3. *Sphærocarpos*—*Dill.* 78. 17.

*Calyx* reticulated like the leaf of a *Jungermannia*. *Capsules* sitting; brownish when ripe. DICKSON. 8. The thick tops of this plant have much the appearance of some of the smaller Mosses, and have, doubtless, on that account been overlooked, but they have a glaucous hue which instantly announces them to the eye accustomed to observe them. MR. WOODWARD.

*Sphærocarpos terrestris.* *E. bot.* [Cloverfields, Heyden and Norwich. MR. BRYANT. Very common on our cloverfields in autumn, on sandy loams along with *Riccia glauca*, the first year of the clover. MR. WOODWARD.]

**MARCHANTIA.** Male: *Calyx* salver shaped: *anthers* numerous, imbedded in its disk.

Fem. *Calyx* target-shaped, flowering on the under side: *capsules* opening at the top: *seeds* fixed to elastic fibres.

Obs. For a more particular account of the parts of fructification, see vol. I. p. 366, and 388.

M. Leaf bluntly lobed; calyx of the female flowers mostly 10-cleft. polymorpha.

Schmid. 29. 1 to 30—Hedw. theor. 24. 127 to 131, fructification—E. bot. 210—Dill. 76. 6. E. F—Mich. 1. 1 and 3—Lon. i. 219. 2—Fuchs. 473, (misprinted 476)—Trag. 523—Matth. 1038—Lob. obs. 646. 1. ic. ii. 246. 1—Dod. 473. 2—Ger. em. 1565. 3—Ger. 1376—Matth. a. C. B. 732—Gars. 300.

A yellowish substance resembling a lock of wool proceeds from the capsules, appearing to move within them whilst the seed is falling out. LINN. From three to five inches long, one broad, and irregularly lobed; dark green, shining. *Fruit-stalks* in the angles of the lobes, one to three inches high. *Capsules* greenish, dividing into eight or ten segments. On the upper surface we here and there observe certain glass-shaped conical cups, on short pedicles, with a wide and scalloped margin. WEIS. which inclose about four little bodies, very finely serrated at the edges. POLLICH. In figure somewhat resembling an oak leaf; surface reticulated. DILL.

In wet places both shady and open. On wet shady walks and on the sides of wells and springs. P. June—Aug.

Var. 2. Plant smaller; not shining.

Dill. 77. 7—Mich. 1. 2—Lob. obs. upper right hand fig.—Lob. ic. 246—J. B. iii. 758. 2.

Leaves smaller and shorter than in 1; fine green, not shining, not reticulated; densely compacted one upon another. DILL.

On the North side of walls, and stones, and in shady areas behind houses. DILL. July—Aug.



Var. 2. Calyx with eight clefts.

*Mich.* 1. 5.

crucia'ta. M. Female calyx with four divisions; segments tubular.

*Dill.* 75. 5—*Mich.* 4, *Lunaria*—*Burb.* i. 62. 2.

Crowded in its growth, sometimes branched, new leaves proceeding from the ends of the old ones, from half to one inch long, pleasant green, not pellucid, not veined. *Calyx* with four, and sometimes five divisions. *DILL.* *Fruit-stalk* white, tender, brittle; one to two inches high. *Mr. STACKHOUSE.*

Shady courts and garden walks.

P. June—Oct.

hemisphæ'- M. Leaf scalloped; female calyx 5-cleft; hemispherical.  
rica.

*E. bot.* 503—*Schmid.* 34—*Dill.* 75. 2—*Mich.* 2. 2—*Fl. dan.* 762—*Burb.* ii. 5. 1.

*Head* hemispherical, with five globules underneath. *Globules* bursting, and pouring out seeds. *LINN.* *Leaf* from half to one and a half inch long, concave, edge waved and scalloped; at first simple, cloven when older, and a young one issuing from the end. *Fruit-stalks* an inch high, brownish, naked. *DILL.*

Sides of rivers and wet ditches, and wet rocks.

P. April—May,

co'nica. M. Leaf forked, indented; female calyx somewhat egg-shaped, with about five cells underneath.

*E. bot.* 504—*Schmid.* 31—*Hedw. theor.* 25, 134 to 136—*Mich.* 2. 1—*Dill.* 75. 1—*Vaill.* 33. 8—*Fl. dan.* 274—*Col. ecphr.* 331. 1—*Park.* 1314. 4.

*Leaves* pleasant pale green, slippery to the touch, creeping on the ground, dotted on the surface, producing new leaves from the ends of the old ones. *DILL.* *Male flowers* on the leaf, resembling warts. *LINN.* *Fruit-stalks* three or four inches high, transparent, very tender. *Common calyx*, five cells bursting at the base, often varying in number from some proving abortive. *Seeds* when ripe hanging out attached to

threads, having the appearance of the woolly substance which contains the seeds of the *Lycopodons*. Mr. WOODWARD. *Leaves* in large clusters, indented, blunt, green, with several white tubercles.

On the ground on the banks of brooks in shady places, and sometimes on rocks. DILL. [Very common, but I have only found it in fruit in one place on the shady banks of a ditch at Ditchingham, Norfolk, where I have observed it for some years. Mr. WOODWARD. In a wet ditch near Belsey Bridge, Ditchingham. Mr. STONE. Road from Kingshill to Cam, Gloucestershire, in fruit. Mr. BAKER.]

P. March—April.

M. Leaf forked, segments strap-shaped; female calyx en-andro'gyna, tire, hemispherical.

*Dicks. h. s.*—*Dill.* 75. 3. A. C.—*Mich.* 2. 3—*Dill.* 75. 3. B.

*Shoots* strap-shaped, forked, dotted: often notched at the end; mid-rib blackish. WEBER. *Fruit-stalk* terminating, half to one inch high. *Plant* green, strap-shaped, smooth, flat, in forked divisions. DILL.

Under wet rocks on the mountains of Scotland. DICKSON.  
ii. 17.

BLA'SIA. Male: solitary, imbedded in the substance of the leaf.

Fem. *Capsule* egg-shaped, 1-celled, crowned with a tube through which the seeds escape.

OBS. For further particulars of the fructification, see Vol. 1. p. 368, and 390.

B.

pusilla.

*Schmid. Blas.*—*Hedw. theor.* 27. 156 to 164—*E. bot.* 1328.  
*Dill.* 31. 7—*Mich.* 7, *Blasia-Fl. dan.* 45.

*Seeds* when ripe flowing out of a cup-like cylindrical vessel, so small that their figure is not discernible to the naked

eye. LINN. *succ. n.* 1053. *Leaves* in a circle, from one to two inches in diameter, deep purple at the base, green at the edges, jagged. Grows in a circular form in shady places. *Leaves* thin, green, pellucid, with whitish veins towards the base, waved at the edge, cloven at the ends. *Fruit-stalk* one eighth of an inch high, several rising in succession from near the ends of the leaves. DILL.

*Dwarf Blasia.* On the sides of ditches and rivers in a sandy soil. HUDSON. At the breaking of Medlock River Bank at Feasington Wood between Garret and Knotmill, about a mile from Manchester. HARRISON, in *Dill.* 238. Near Halifax. BOLTON. On Hounslow Heath. HUDSON.

P. Aug.—Nov.

RIC'CIA. *Capsules* sessile, globular, 1-celled, growing at the apex of the leaf, and containing from 20 to 30 brown or white seeds. See vol. I. p. 368, and 391.

na'tans.

R. Leaves inversely heart-shaped; fringed.

*E. bot.* 252—*Dill.* 78. 18.

The edges of the leaves are not really fringed, but assume that appearance in consequence of their sending out fibrous roots. WEBER. About half an inch long. *Fringe* sometimes white. SCHOLL. *Leaves* sometimes only inversely egg-shaped, and without any notch at the end; entire at the edge, bright green. WEBER. Very nearly allied to *Targionia hypophylla*. HUDSON.

Pools about Hadley, Suffolk. BUDDLE, in *Dill.* 537. [Sawston Moor, Cambridgeshire. Mr. RELHAN.]

A. Aug.—Oct.

min'ima.

R. Leaves smooth, deeply divided; acute.

*Dill.* 78. 11—*Mich.* 57. 6, *magnified*—*Schmid.* 45. 3, *ends of the segments blunt.*

*Shoots* hardly a line in breadth, generally forked, entire and pointed, or else notched at the end. In the substance, and to-

wards the base of the leaf, in the month of October we may observe greenish globules, changing to brown and then to black. WEBER.

On Black Heath near Greenwich. DILL. In places that have been overflowed. HUDSON. A. Nov.—Dec.

R. Leaves smooth, channelled, 2-lobed, blunt.

glau'ca.

Schmid. 44. 1—Hedw. theor. 29. 165 to 174—Vaill. 19. 1—Fl. dan. 898. 1—Mich. 57. 4—Dill. 78. 10—Burb. ii. 5. 5.

I have frequently observed black spots immersed in the substance of the leaves, which are what Micheli has described as capsules full of seeds, and which has been since clearly ascertained by Hedwig. Mr. WOODWARD. Leaves small, the under side firmly fixed to the ground, adhering at the base to each other, deeply divided, POLlich, whitish green, thick, slippery, very smooth, broadish, furrowed on the upper side, frequently forked; segments blunt. WEBER. Growing in a circular form. Leaves thick, issuing from a centre, often cloven. Roots fine black fibres from the under surface of the plant which floats on the water. RAY. hist. I have never seen it on the water, but in roads and wet cornfields both in spring and autumn. DILL.

Sandy moist heaths. [In the same situations, and usually growing with *Targionia Sphærocarpos*, and at the same time. Mr. WOODWARD. In clover stubbles near Bungay, Suffolk, frequent. Mr. STONE.] A. Oct.—April.

R. Leaves forked, strap-thread-shaped.

flu'itans.

Vaill. 19. 3—Dill. 74. 47—Mich. 4. 6—E. bot. 251—Pet. mus. 2. 253—Fl. dan. 275.

Not having myself seen its fructifications, it is still a doubt whether it really belongs to this genus. LINN. Floating in stagnant water; brown green in spring, pure green in summer. DILL.

Ditches and sides of pools.

P. Jan.—Dec.

R. Leaves upright, compressed, variously branched; fruticulo'sa. branches upright, forked, awl-shaped.

Fl. dan. 898. 3.



Its habit that of *Jungermannia furcata*. Colour verdigris, or greenish blue. DICKSON. It produces viviparous germs towards the ends of the branches. The verdigris colour is not constant. I suspect it will be found to be a *Jungermannia*. Mr. BROWN.

On the bottom of the trunks of trees among moss. [At Colington, near Edinburgh. Mr. BROWN.]

**ANTHO'CEROS.** *Capsule* awl-shaped, 2-valved: seeds fixed to the partition or to the valves.

Obs. For more particulars of the fructification see vol. I. p. 367, and 390.

punctatus. A. Leaf curled, indented, jagged, dotted.

Schmid. 47-Dill. 68. 1-Mich. 7. 2-Fl. dan. 396.

*Capsules* and *fruit-stalks* from one to three inches long, spreading wide in shady places. *Leaves* short, scolloped, jagged, thin, pellucid, deep green. *Fruit-stalks* green, numerous, sheathed at the base. The whole plant turns black when dried in paper. DILL. *Leaves* deep green, crisp, resembling *Jungermannia pinguis*. *Fruit-stalks* simple, issuing out of a lopped sheathing involucre. *Capsules* at the end of the fruit-stalk; valves two, bursting. *Seeds* adhering to a columnar receptacle. Mr. WOODWARD. Dots on the leaves black. WEBER.

On heaths in moistish shady places. [Ellingham fen, Bungay, Suffolk, near the direction post. Mr. STONE. Brome, Norfolk, on the borders between the high and boggy ground. WOODWARD.]

P. August-April.

lævis.

A. Leaf undivided, indented, smooth.

Dill. 68. 2.

When recent it is of a rich velvety green colour; the texture most beautiful when held to the light, but without spots, says Mr. STACKHOUSE, who thinks this and *A. punctatus* may probably be one and the same species; *lævis* the plant when barren, *punctatus* when fruiting, for the spots when highly magnified exhibit clusters of seeds or male flowers; and Dillenius figures 68. 1, and 2, seem to countenance this hypothesis.

First discovered in Britain by Mr. STACKHOUSE, who found it growing in a shady over-hanging cavity in Fowey Harbour, Cornwall.

A. Leaf with doubly winged clefts: segments strap-multifidus shaped.

*Dill.* 68. 4.

Dillenius had not discovered this plant, but figured it from specimens sent by Haller. I am indebted to Mr. DICKSON for it. Somewhat resembles the *Riccia fluitans*, but the segments are pointed, not lopped at the end.

END OF THE THIRD VOLUME.

THE END

BY THE AUTHOR

# Latin Index

TO THE SECOND AND THIRD VOLUMES.

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<i>bipartitum</i>	1023	<i>lanuginosum</i>	1010	<i>striatum</i>	993
<i>brevifolium</i>	1017	<i>laterale</i>	1008	<i>striatum</i>	994
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<i>callistomum</i>	1003	<i>longifolium</i>	1020	<i>tectorum</i>	993
<i>canescens</i>	1010	<i>macrocarpon</i>	1007	<i>tenuis</i>	1014
<i>capillaceum</i>	1117	<i>marginatum</i>	1030	<i>tetragonum</i>	1023
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<i>cerviculatum</i>	996	<i>murale</i>	994	<i>triquetrum</i>	999
<i>cirrhatum</i>	1009	<i>murale</i>	994	<i>truncatulum</i>	1002
<i>cirrhatum</i>	1010	<i>nigrum</i>	1029	<i>undulatum</i>	1024
<i>convolutum</i>	1000	<i>nutans</i>	1028	<i>unguicula-</i>	
<i>crispatum</i>	1020	<i>obtusum</i>	995	<i>tum</i>	1016
<i>crispum</i>	1012	<i>ovatum</i>	995	<i>vaginale</i>	1013
<i>crudum</i>	990	<i>pallidum</i>	1003	<i>ventricosum</i>	990
<i>cubitale</i>	1029	<i>paludosum</i>	996	<i>verticillatum</i>	1006
<i>cuneifolium</i>	994	<i>parvulum</i>	1019	<i>virens</i>	1002
<i>curvirostrum</i>	1015	<i>patens</i>	1007	<i>viridulum</i>	1002
<i>daviesii</i>	1023	<i>paucifolium</i>	998	<i>viridulum</i>	998
<i>dealbatum</i>	1000	<i>pellucidum</i>	983	<i>weissii</i>	1013
<i>delicatum</i>	1026	<i>pennatum</i>	1006	<i>zierii</i>	1028
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<i>flexifolium</i>	999	<i>trum</i>	1015	<i>flexuosum</i>	366



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<b>BUXUS</b>	270	<i>crispus</i>	860	<i>melchiana</i>	147
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<i>arenaria</i>	222	<i>lanceolatus</i>	861	<i>ovalis</i>	122
<i>colorata</i>	155	<i>marianus</i>	863	<i>pallescens</i>	140
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maritima	695	DAPHNE	467	<i>muralis</i>	700
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<i>villosum</i>	456	<i>cannabinum</i>	870	<i>myurus</i>	200
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<i>cinerea</i>	465	<i>peplis</i>	547	<i>Ficaria verna</i>	618
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<i>x vulgaris</i>	464	<i>segetalis</i>	548	<i>bryoides</i>	1032
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boreale	249	pratense	747	virostrum	1014
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verrucosum	250	violaceum	594	hispidum	837
verum	248	GLAUX	338	paludosa	836
witheringii	243	maritima	338	HEDYSARUM	790
<i>GENISTA</i>	768	GLECOMA	649	onobrychis	790
anglica	769	hederacea	649	HELLEBORUS	627
pilosa	769	GNAPHALIUM	876	fœtidus	627
tinctoria	768	alpinum	880	viridis	627
<i>GENTIANA</i>	353	dioicum	877	HERACLEUM	370
amarella	355	gallicum	880	sphondylium	370



<b>HERNIARIA</b>	340	<i>pratense</i>	227	<i>compressum</i>	1051
<i>glabra</i>	340	<i>secalinum</i>	228	<i>crispum</i>	1037
<i>hirsuta</i>	341	<i>sylvaticum</i>	226	<i>crista-castren-</i>	
<b>HESPERIS</b>	726	<i>sylvaticum</i>	229	<i>sis</i>	1046
<i>inodora</i>	726	<b>HOTTONIA</b>	301	<i>cupressiforme</i>	1050
<b>HIERACIUM</b>	838	<i>palustre</i>	301	<i>curtipendu-</i>	
<i>alpinum</i>	839	<b>HUMULUS</b>	349	<i>lum</i>	1057
<i>aurantiacum</i>	841	<i>lupulus</i>	349	<i>cuspidatum</i>	1055
<i>auricula</i>	841	<i>Hyacinthus non-</i>		<i>cylindricum</i>	1053
<i>cerinthoides</i>	846	<i>scriptus</i>	422	<i>dendroides</i>	1051
<i>denticulatum</i>	669	<b>HYDROCHARIS</b>	486	<i>denticulatum</i>	1032
<i>dubium</i>	840	<i>morsus-ranæ</i>	486	<i>dicksoni</i>	1043
<i>folio, &amp;c.</i>	839	<b>HYDROCOTYLE</b>	358	<i>dubium</i>	1046
<i>incanum</i>	837	<i>vulgaris</i>	358	<i>filamentosum</i>	1056
<i>maculatum</i>	844	<i>Hymenophyl-</i>		<i>filicinum</i>	1045
<i>molle</i>	847	<i>lum</i>	960	<i>filifolium</i>	1055
<i>murorum</i>	845	<b>HYOSCYAMUS</b>	321	<i>filiforme</i>	1055
<i>murorum</i>	844	<i>albus</i>	322	<i>flagellare</i>	1048
<i>paludosum</i>	843	<i>niger</i>	321	<i>fluitans</i>	1042
<i>pilosella</i>	838	<b>HYOSERIS</b>	851	<i>gracile</i>	1052
<i>prenanthoides</i>	843	<i>minima</i>	851	<i>heteromallum</i>	970
<i>pulchrum</i>	851	<b>HYPERICUM</b>	814	<i>illecebrum</i>	1055
<i>sabaudum</i>	842	<i>androsæmum</i>	814	<i>intricatum</i>	1040
<i>spicatum</i>	843	<i>barbatum</i>	819	<i>loreum</i>	1049
<i>sylvaticum</i>	846	<i>calycinum</i>	820	<i>lucis</i>	1035
<i>sylvaticum</i>	844	<i>dubium</i>	816	<i>lutescens</i>	1039
<i>taraxaci</i>	840	<i>elodes</i>	817	<i>medium</i>	1037
<i>umbellatum</i>	847	<i>hirsutum</i>	818	<i>molle</i>	1054
<i>villosum</i>	846	<i>humifusum</i>	817	<i>molluscum</i>	1051
<b>HIPPOCREPIS</b>	790	<i>montanum</i>	818	<i>murale</i>	1054
<i>comosa</i>	790	<i>perforatum</i>	815	<i>myosuroides</i>	1058
<b>HIPPOPHAE</b>	263	<i>pulchrum</i>	819	<i>myosuroides</i>	1058
<i>rhamnoides</i>	263	<i>quadrangulum</i>	814	<i>myosuron</i>	1058
<b>HIPPURIS</b>	5	<b>HYPNUM</b>	1031	<i>nitens</i>	1043
<i>vulgaris</i>	5	<i>abietinum</i>	1046	<i>ornithopoides</i>	1052
<b>HOLCUS</b>	178	<i>adiantoides</i>	1033	<i>palustre</i>	1049
<i>avenaceus</i>	179	<i>aduncum</i>	1050	<i>parietinum</i>	1045
<i>avenaceus</i>	217	<i>albicans</i>	1040	<i>pennatum</i>	1043
<i>lanatus</i>	178	<i>alopecurum</i>	1052	<i>pennatum</i>	969
<i>mollis</i>	178	<i>asplenioides</i>	1033	<i>plumosum</i>	1044
<b>HOLOSTEUM</b>	233	<i>atro-virens</i>	1057	<i>polycarpon</i>	1010
<i>umbellatum</i>	233	<i>attenuatum</i>	1053	<i>prælongum</i>	1047
<b>HORDEUM</b>	226	<i>bryoides</i>	1032	<i>proliferum</i>	1044
<i>cylindricum</i>	229	<i>cassubicum</i>	1039	<i>prolixum</i>	1044
<i>maritimum</i>	228	<i>chrysocomum</i>	985	<i>pulchellum</i>	1038
<i>maritimum</i>	228	<i>clavellatum</i>	1060	<i>pumilum</i>	1043
<i>murinum</i>	227	<i>complanatum</i>	1034	<i>purum</i>	1056
<i>murinum</i>	228	<i>complanatum</i>	1034	<i>refuscens</i>	1036

<i>riparioides</i>	1039	<i>dysenterica</i>	900	<i>angulosa</i>	1067
<i>riparium</i>	1054	<i>helenium</i>	899	<i>asplenioides</i>	1064
<i>rotundifolium</i>	1035	<i>pulicaria</i>	901	<i>bicuspidata</i>	1068
<i>rugosum</i>	1047	<i>uliginosa</i>	902	<i>bidentata</i>	1065
<i>ruscifolium</i>	1039	<i>IRIS</i>	97	<i>ciliaris</i>	1075
<i>rutabulum</i>	1042	<i>foetida</i>	97	<i>ciliaris</i>	1076
<i>rutabulum</i>	1041	<i>foetidissima</i>	97	<i>cinerea</i>	1079
<i>sciuiroides</i>	1036	<i>peudacorus</i>	97	<i>cochlearifor-</i>	
<i>scorpioides</i>	1048	<i>xiphium</i>	96	<i>mis</i>	1071
<i>sericeum</i>	1058	<i>ISATIS</i>	696	<i>complanata</i>	1073
<i>sericeum</i>	1044	<i>tinctoria</i>	696	<i>concinata</i>	1077
<i>serpens</i>	1059	<i>ISOETES</i>	935	<i>curvifolia</i>	1079
<i>smithii</i>	1043	<i>lacustris</i>	935	<i>dilatata</i>	1073
<i>squarrosus</i>	1048	<i>JUNCUS</i>	428	<i>epiphylla</i>	1061
<i>stellatum</i>	1035	<i>acutus</i>	430	<i>excisa</i>	1074
<i>stramineum</i>	1053	<i>acutiflorus</i>	421	<i>fissa</i>	1067
<i>striatum</i>	1041	<i>articulatus</i>	431	<i>furcata</i>	1062
<i>strumosum</i>	1020	<i>biglumis</i>	433	<i>inflata</i>	1066
<i>sylvaticum</i>	1034	<i>bufonius</i>	433	<i>julacea</i>	1077
<i>taxifolium</i>	1034	<i>bulbosus</i>	433	<i>lampocarpus</i>	1065
<i>trichomanoides</i>		<i>campestris</i>	436	<i>macrorrhiza</i>	1066
	1033	<i>castaneus</i>	434	<i>minuta</i>	1068
<i>triquetrum</i>	1041	<i>compressus</i>	431	<i>multifida</i>	1063
<i>undulatum</i>	1040	<i>conglomeratus</i>	428	<i>multiflora</i>	1073
<i>utabulum</i>	1042	<i>effusus</i>	429	<i>nemorosa</i>	1070
<i>velutinum</i>	1059	<i>filiformis</i>	429	<i>ovata</i>	1072
<i>viticulosum</i>	1038	<i>forsteri</i>	435	<i>pauciflora</i>	1069
<b>HYPOCHÆRIS</b>	851	<i>inflexus</i>	429	<i>pinguis</i>	1063
<i>glabra</i>	852	<i>lampocarpus</i>	431	<i>platyphylla</i>	1075
<i>maculata</i>	851	<i>liniger</i>	436	<i>polyanthos</i>	1068
<i>radicata</i>	853	<i>maritimus</i>	430	<i>pulcherrima</i>	1076
		<i>maximus</i>	435	<i>pumila</i>	1079
<b>JASIONE</b>	315	<i>memorosus</i>	431	<i>pusilla</i>	1062
<i>montana</i>	316	<i>obtusiflorus</i>	432	<i>purpurea</i>	1072
<b>IBERIS</b>	711	<i>pilosus</i>	435	<i>quinque-den-</i>	
<i>amara</i>	711	<i>spicatus</i>	436	<i>tata</i>	1066
<i>nudicaulis</i>	711	<i>squarrosus</i>	430	<i>reptans</i>	1073
<b>ILEX</b>	271	<i>sylvaticus</i>	436	<i>resupinata</i>	1070
<i>aquifolium</i>	271	<i>trifidus</i>	428	<i>rupestris</i>	1077
<b>ILLECEBRUM</b>	337	<i>triglumis</i>	434	<i>scalaris</i>	1065
<i>verticillatum</i>	337	<i>uliginosus</i>	432	<i>sinuata</i>	1062
<b>IMPATIENS</b>	333	<i>uliginosus</i>	431	<i>sphæroceph-</i>	
<i>noli-tangere</i>	333	<b>JUNIFERUS</b>	739	<i>ala</i>	1066
<b>IMPERATORIA</b>	388	<i>communis</i>	739	<i>sphagni</i>	1067
<i>ostruthium</i>	388	<b>JUNGERMANNIA</b>		<i>spinulosa</i>	1069
<b>INULA</b>	899	<i>adunca</i>	1076	<i>tamariscifolia</i>	1074
<i>crithnioides</i>	902	<i>albicans</i>	1070	<i>tomentella</i>	1075
<i>cylindrica</i>	902	<i>alpina</i>	1078	<i>trichomanes</i>	1065

<i>trichophylla</i>	1078	<i>trisolca</i>	51	<i>urens</i>	312
<i>trilobata</i>	1072	<i>LEONTODON</i>	833	<i>LOTIUM</i>	222
<i>undulata</i>	1069	<i>autumnale</i>	835	<i>arvense</i>	224
<i>varia</i>	1076	<i>hirtum</i>	837	<i>bromoides</i>	201
<i>ventricosa</i>	1069	<i>hispidum</i>	836	<i>peregrin</i>	222
<i>viticulosa</i>	1067	<i>officinale</i>	834	<i>temulentum</i>	223
<i>Knappia agrostioides</i>	177	<i>palustre</i>	834	<i>tenue</i>	223
<i>tidea</i>	177	<i>iraii</i>	835	<i>LYNICERA</i>	314
<i>Koeleria hyemalis</i>	177	<i>taraxacum</i>	833	<i>caprifolium</i>	314
<i>grometrica</i>	986	<i>tarax. paludos.</i>	835	<i>periclymenum</i>	314
<i>LACTUCA</i>	831	<i>LEONURUS</i>	659	<i>xylostium</i>	315
<i>saligna</i>	832	<i>cardiaca</i>	659	<i>LOTUS</i>	807
<i>scariola</i>	831	<i>LEPIDIUM</i>	701	<i>corniculatus</i>	807
<i>scariola</i>	832	<i>anglicum</i>	711	<i>cornicul. major</i>	808
<i>scariola</i>	832	<i>didymum</i>	711	<i>diffusa</i>	808
<i>scariola</i>	832	<i>latifolium</i>	701	<i>fol. longiorib.</i>	808
<i>virosa</i>	831	<i>ruderales</i>	702	<i>major</i>	808
<i>LAGURUS</i>	220	<i>petraeum</i>	701	<i>pentaphyllum</i>	808
<i>ovatus</i>	220	<i>Leskea palustris</i>	1049	<i>tenuissimum</i>	808
<i>LAMIUM</i>	650	<i>sericea</i>	1058	<i>LYCHNIS</i>	529
<i>album</i>	650	<i>LEUCOJUM</i>	412	<i>alpina</i>	531
<i>amplexicaule</i>	651	<i>paestivum</i>	412	<i>dioica</i>	529
<i>dissection</i>	651	<i>LIGUSTICUM</i>	372	<i>diurna</i>	530
<i>incisum</i>	651	<i>cornubiense</i>	372	<i>flos-cuculi</i>	531
<i>purpureum</i>	650	<i>omeum</i>	383	<i>vespertina</i>	530
<i>rubr. minus</i>	651	<i>scoticum</i>	372	<i>viscaria</i>	531
<i>Lapathum aureum</i>	444	<i>LIGUSTRUM</i>	10	<i>LYCOPodium</i>	930
<i>LAPSANA</i>	853	<i>vulgare</i>	10	<i>alpinum</i>	933
<i>communis</i>	854	<i>DIMOSELLA</i>	687	<i>annotinum</i>	933
<i>LATHRAEA</i>	674	<i>aquatica</i>	687	<i>clavatum</i>	930
<i>squamaria</i>	675	<i>DINNEA</i>	685	<i>inundatum</i>	932
<i>LATHYRUS</i>	777	<i>borealis</i>	686	<i>selaginoides</i>	931
<i>aphaca</i>	777	<i>LINUM</i>	402	<i>selago</i>	932
<i>hirsutus</i>	778	<i>angustifolium</i>	403	<i>LYCOPSIS</i>	295
<i>latifolius</i>	780	<i>catharticum</i>	404	<i>arvensis</i>	295
<i>nissolia</i>	777	<i>peregrine</i>	402	<i>LYCOPUS</i>	23
<i>palustris</i>	781	<i>radiola</i>	404	<i>europaeus</i>	23
<i>pratensis</i>	779	<i>tenuifolium</i>	404	<i>LYSIMACHIA</i>	301
<i>sylvestris</i>	780	<i>usitatissimum</i>	402	<i>nemorum</i>	302
<i>LAVATERA</i>	757	<i>LITHOSPERMUM</i>	288	<i>nummularia</i>	302
<i>arborea</i>	757	<i>arvense</i>	288	<i>thyrsiflora</i>	302
<i>Leersia ciliata</i>	1001	<i>officinale</i>	288	<i>vulgaris</i>	301
<i>lanceolata</i>	1009	<i>purpureo-caeru-</i>	288	<i>LYTHRUM</i>	540
<i>vulgaris</i>	1000	<i>leum</i>	289	<i>hyssopifolium</i>	541
<i>LEMNA</i>	50	<i>LITTORELLA</i>	252	<i>salicaria</i>	540
<i>gibba</i>	50	<i>lacustris</i>	252		
<i>minor</i>	50	<i>LOBELIA</i>	312	<i>Maesia uliginosa</i>	981
<i>polyrhiza</i>	52	<i>dortmagna</i>	312	<i>MALAXIS</i>	46



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parviflora	755	agrestis	647	arcuatum	985
pusilla	754	aquatica	644	crispiticiam	990
rotundifolia	755	arvensis	648	capillare	987
sylvestris	756	arvensis	645	cirrhatum	1009
MARCHANTIA	1081	cardiaca	647	crudum	989
androgyna	1083	gentilis	647	cuspidatum	886
conica	1082	gentilis	647	fissum	1067
cruciata	1082	gracilis	647	fontanum	981
hemispherica	1082	gracilis	647	glaucum	983
polymorpha	1081	hirsuta	643	heteromallum	982
MARRUBIUM	658	hirsuta	644	hornum	886
vulgare	658	odorata	642	hygrometricum	985
MATRICARIA	906	paludosa	644	cum clostris	985
chamomilla	908	palustris	644	jungermannia	1072
inodora	905	piperita	642	nuta	985
maritima	907	piperita	643	nutans	985
parthenium	906	pratensis	646	osmundaceum	1006
MEDICAGO	809	præcox	647	palnstre	983
arabica	812	pulegium	648	pellucens	983
cochleata	812	rivalis	645	pellucidum	980
falcata	810	rotundifolia	640	polytrichoides	977
lupulina	811	rotundifolia	639	proliferum	989
minima	813	rubra	646	pseudo-trique-	
muricata	813	rubra	647	trum	990
sativa	809	sativa	645	punctatum	988
polycarpus	812	sylvestris	639	purpureum	984
polymorpha	812	sylvestris	639	pyriforme	1026
MELAMPYRUM	671	variegata	647	ramosum	984
arvense	672	villosa	639	scoparium	980
cristatum	671	viridis	640	serpyllifolium	988
pratense	672	MENYANTHES	300	simplex	982
sylvaticum	674	nymphoides	300	trichomanes	1065
MELICA	182	trifoliata	300	triquetrum	990
cærulea	183	MERCURIALIS	484	turbinatum	985
lobelia	184	annua	485	uliginosum	931
montana	183	perennis	484	undulatum	988
nutans	182	MESPILUS	564	MCENCHIA	694
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MYRICA	268	aranifera	45	sylvaticus	775
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spicatum	482	insectifera	44	mahum	993
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fistulosa	378	vulgare	644	somniaferum	597
peucedanifolia	380	ORNITHOGALUM	419	PARIETARIA	260
pimpinelloides	379	luteum	419	officinalis	260
ÆNOTHERA	457	nutans	419	PARIS	477
biennis	457	pyrenaicum	419	quadrifolia	477
ONOPORDON	867	umbellatum	419	PARNASSIA	399
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spinosa	771	elatior	688	sylvatica	676
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vulgatum	936	minor	690	PEUCEDANUM	369
		minor	690	minus	369
		purpurea	690		

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acaulon	963	PINUS	759	vulgaris	766
acaulon	963	sylvestris	759	POLYGONUM	470
alternifolium	965	PISUM	774	amphibium	470
axillare	966	maritimum	775	aviculare	475
curvicolium	965	PLANTAGO	253	bistorta	474
cuspidatum	963	coronopus	256	convolvulus	477
maximum	970	lanceolata	254	fagopyrum	476
montanum	970	major	253	hydropiper	470
muticum	963	maritima	255	lapathifolium	473
nitidum	966	media	254	minus	471
pedunculatum	971	Poa	185	pallidum	472
piliferum	965	alpina	187	persicaria	471
rectum	966	angustifolia	187	persicaria	473
repens	964	angust. nemor.	192	terrestre	470
serratum	964	annua	189	viviparum	474
stoloniferum	965	aquatica	185	POLYPODIUM	947
subulatum	963	bulbosa	188	aculeatum	955
PELLANDRIUM	380	compressa	194	arvonicum	951
aquaticum	380	cristata	191	cambricum	950
PHLEUM	158	decumbens	194	cristatum	956
alpinum	161	distans	186	dentatum	954
urenarium	158	flexuosa	187	dryopteris	958
arenarium	154	fluitans	207	felix-femina	955
crinitum	164	glaucia	195	felix-mas	953
nodosum	160	humilis	188	fontanum	954
paniculatum	159	loftacea	230	fragile	956
pratense	159	maritima	193	fragrans	954
Phyllitis multi-		minima	192	ilvense	951
fida	942	nemorali	192	lanceolitis	950
polyschides	942	pratensis	186	montanum	952
PHYTEUMA	312	pratens. alpina	195	oreopteris	952
orbicularis	312	procumbens	193	pheopteris	951
PICRIS	826	retroflexa	193	rhaeticum	958
echoides	826	rigida	193	spinulosum	955
hieracioides	826	rupestris	193	thelypteris	953
PILULARIA	934	setacea	186	thelypteris	952
globulifera	934	subcaerulea	189	trifidum	957
PIMPINELLA	391	trivialis	190	vulgare	949

<b>POLYTRICHUM</b>	975	<b>PRIMULA</b>	297	<i>hybrida</i>	564
<i>aloides</i>	977	<i>acaulis</i>	297	<i>malus</i>	565
<i>aloides</i>	977	<i>elation</i>	298	<i>pinnatifida</i>	564
<i>alpinum</i>	978	<i>farinosa</i>	298	<i>terminalis</i>	450
<i>commune</i>	975	<i>officinalis</i>	298		
<i>hercynicum</i>	977	<i>sylvestris</i>	297	<b>QUERCUS</b>	479
<i>nanum</i>	977	<i>seris</i>	297	<i>femina</i>	480
<i>polytrichoides</i>	977	<i>vulgaris</i>	297	<i>latifolia</i>	479
<i>striatum</i>	994	<b>PRUNELLA</b>	667	<i>robur</i>	479
<i>subrotundum</i>	976	<i>vulgaris</i>	637	<i>sessilifolia</i>	380
<i>undulatum</i>	1025	<b>PRUNUS</b>	556		
<i>urnigerum</i>	978	<i>avum</i>	557	<i>Radicula sylves-</i>	
<b>POPULUS</b>	465	<i>cerasus</i>	557	<i>tris</i>	719
<i>alba</i>	465	<i>communis</i>	558	<i>Radiola milegra-</i>	
<i>nigra</i>	466	<i>gallica</i>	558	<i>na</i>	405
<i>tremula</i>	466	<i>domestica</i>	558	<b>RANUNCULUS</b>	618
<b>POTAMOGETON</b>	272	<i>insititia</i>	558	<i>aeris</i>	621
<i>compressum</i>	275	<i>padus</i>	556	<i>alpestris</i>	622
<i>crispum</i>	274	<i>spinosa</i>	559	<i>aquatilis</i>	623
<i>densum</i>	274	<i>sylvestris</i>	559	<i>arvensis</i>	625
<i>fluitans</i>	273	<i>Pterigynandrum</i>		<i>auricomus</i>	620
<i>gramineum</i>	276	<i>gracile</i>	1053	<i>bulbosus</i>	624
<i>heterophyllum</i>	273	<b>PTERIS</b>	939	<i>ficaria</i>	618
<i>lanceolatum</i>	276	<i>aquilina</i>	940	<i>flamula</i>	618
<i>lucens</i>	274	<i>crispa</i>	939	<i>gramineus</i>	620
<i>marinum</i>	275	<i>Pterogonium gra-</i>		<i>hederaceus</i>	622
<i>natans</i>	272	<i>cile</i>	1052	<i>hirsutus</i>	624
<i>palustre</i>	273	<i>smithii</i>	1043	<i>lingua</i>	619
<i>pectinatum</i>	275	<i>Pulegium</i>	649	<i>parviflorus</i>	622
<i>perfoliatum</i>	274	<b>PULMONARIA</b>	291	<i>parvulus</i>	498
<i>pusillum</i>	277	<i>angustifolia</i>	291	<i>repens</i>	625
<i>setaceum</i>	276	<i>maritima</i>	293	<i>reptans</i>	919
<b>POTENTILLA</b>	579	<i>officinalis</i>	292	<i>sceleratus</i>	621
<i>alba</i>	581	<i>Pyrethrum inodo-</i>		<b>RAPHANUS</b>	736
<i>anserina</i>	579	<i>rum</i>	905	<i>raphanistrum</i>	736
<i>argentea</i>	581	<i>maritimum</i>	907	<i>maritimus</i>	737
<i>agrea</i>	583	<i>parthenium</i>	907	<b>RESEDA</b>	545
<i>fruticosa</i>	579	<b>PYROLA</b>	491	<i>lutea</i>	546
<i>reptans</i>	581	<i>media</i>	492	<i>luteola</i>	545
<i>rupestris</i>	580	<i>minor</i>	492	<b>RHAMNUS</b>	327
<i>sylvestris</i>	584	<i>rotundifolia</i>	491	<i>catharticus</i>	327
<i>tormentilla</i>	584	<i>secunda</i>	493	<i>frangula</i>	328
<i>tridentata</i>	580	<i>uniflora</i>	493	<b>RHINANTHUS</b>	669
<i>verna</i>	582	<b>PYRUS</b>	565	<i>crista-galli</i>	669
<b>POTERIUM</b>	605	<i>achras</i>	565	<b>RHODIOLA</b>	481
<i>sanguisorba</i>	606	<i>aria</i>	560	<i>rosea</i>	481
<b>PRENANTHES</b>	832	<i>aucuparia</i>	562	<b>RIBES</b>	333
<i>muralis</i>	833	<i>communis</i>	565	<i>alpinum</i>	334



<i>Grossularia</i>	336	<i>Crispus</i>	440	<i>Torbania</i>	58
<i>ingrum</i>	335	<i>digynus</i>	444	<i>fragilis</i>	66
<i>rubrum</i>	334	<i>hydro-lapa-</i>		<i>fusca</i>	73
<i>spicatum</i>	335	<i>thum</i>	442	<i>fusca</i>	72
<i>uva-crispa</i>	337	<i>maritimus</i>	444	<i>glauca</i>	71
<b>RICCIA</b>	1084	<i>maritima</i>	443	<i>helix</i>	57
<i>fruticans</i>	1085	<i>obtusifolius</i>	444	<i>herbacea</i>	69
<i>fruticulosa</i>	1085	<i>paludosus</i>	441	<i>hermaphroditi-</i>	
<i>glauca</i>	1085	<i>palustris</i>	442	<i>lica</i>	63
<i>minima</i>	1084	<i>pulcher</i>	443	<i>hirta</i>	83
<i>natans</i>	1084	<i>sanguineus</i>	440	<i>humilis</i>	74
<b>ROSA</b>	568	<b>RUPPIA</b>	277	<i>lambertiana</i>	58
<i>arvensis</i>	568	<i>maritima</i>	277	<i>lanata</i>	77
<i>canina</i>	572	<b>RUSCUS</b>	94	<i>lanceolata</i>	60
<i>collina</i>	572	<i>aculeatus</i>	94	<i>laponum</i>	71
<i>eglanteria</i>	572	<i>laxus</i>	95	<i>laurina</i>	64
<i>hibernica</i>	571	<b>SAGINA</b>	278	<i>mollissima</i>	80
<i>involuta</i>	570	<i>apetala</i>	278	<i>monandra</i>	58
<i>rubiginosa</i>	571	<i>cerastoides</i>	279	<i>myrsinites</i>	67
<i>scabriuscula</i>	570	<i>erecta</i>	279	<i>myrsinites</i>	68
<i>spinosissima</i>	569	<i>procumbens</i>	278	<i>myrtilloides</i>	69
<i>suavifolia</i>	572	<b>SAGITTARIA</b>	629	<i>nigricans</i>	68
<i>tomentosa</i>	570	<i>sagittifolia</i>	629	<i>oleifolia</i>	77
<i>villosa</i>	570	<b>SALICORNIA</b>	5	<i>parvifolia</i>	73
<b>ROTTBOLLIA</b>	224	<i>fruticosa</i>	5	<i>pentandra</i>	62
<i>incurvata</i>	225	<i>herbacea</i>	5	<i>pentandra</i>	63
<b>RUBIA</b>	250	<b>SALIX</b>	52	<i>petiolaris</i>	64
<i>anglica</i>	250	<i>acuminata</i>	79	<i>phylicifolia</i>	65
<i>peregrina</i>	251	<i>alba</i>	81	<i>prostrata</i>	72
<i>sylo. aspera.</i>	251	<i>amygdalina</i>	60	<i>prunifolia</i>	68
<i>tinctorum</i>	250	<i>aquatica</i>	76	<i>purpurea</i>	57
<b>RUBUS</b>	573	<i>arenaria</i>	71	<i>radicans</i>	65
<i>arcticus</i>	577	<i>arenaria</i>	72	<i>repens</i>	74
<i>cæsius</i>	574	<i>argentea</i>	72	<i>repens</i>	72
<i>chamæmorus</i>	577	<i>aurita</i>	76	<i>reticulata</i>	70
<i>corylifolius</i>	574	<i>bicolor</i>	64	<i>retusa</i>	68
<i>fruticulosus</i>	575	<i>bicolor</i>	64	<i>rosmarinifolia</i>	75
<i>fruticulosus ma-</i>		<i>caprea</i>	78	<i>rubra</i>	59
<i>ior</i>	575	<i>caprea</i>	76	<i>russelliana</i>	61
<i>idæus</i>	573	<i>carinata</i>	69	<i>sphacelata</i>	51
<i>saxatilis</i>	576	<i>cinerea</i>	52	<i>stipularis</i>	80
<b>RUMEX</b>	440	<i>cinerea</i>	77	<i>tenuifolia</i>	67
<i>acetosa</i>	445	<i>cotinifolia</i>	77	<i>triandra</i>	59
<i>acetosella</i>	445	<i>croweana</i>	59	<i>venulosa</i>	68
<i>acutus</i>	441	<i>decipiens</i>	62	<i>viuialis</i>	81
<i>acutus</i>	442	<i>depressa</i>	74	<i>vitellina</i>	66
<i>aquaticus</i>	442	<i>dicksoniana</i>	69	<b>SALSOLA</b>	350
<i>aureus</i>	444			<i>fruticosa</i>	351



kali	350	cerefolium	386	vernalis	684
<b>SALVIA</b>	24	odorata	384	<b>SCUTELLARIA</b>	666
pratensis	24	pecten	385	galericulata	666
verbenaca	24	<i>pecten veneris</i>	385	minor	666
<b>SAMBUCUS</b>	396	<b>SCHUCHZERIA</b>	446	<b>SEDUM</b>	523
ebulus	396	palustris	446	acre	525
nigra	396	<b>SCHOENUS</b>	109	album	525
<b>SAMOLUS</b>	313	albus	112	anglicum	526
valerandi	314	<i>albus (fuscus)</i>	111	dasyphyllum	526
<b>SANGUISORBA</b>	257	compressus	111	<i>minus</i>	525
officinalis	258	<i>compressus</i>	111	reflexum	527
<b>SANICULA</b>	358	ferrugineus	110	<i>rubens</i>	526
europæa	358	<i>ferrugineus</i>	112	rupe-tre	527
<b>SANTOLINA</b>	871	fuscus	110	sexangulare	526
maritima	871	mariscus	109	telephium	523
<b>SAPONARIA</b>	503	nigricans	110	villosum	524
<i>concava</i>	504	rufus	111	<b>SELINUM</b>	367
<i>hybrida</i>	503	<b>SCILLA</b>	421	palustre	367
officinalis	503	autumnalis	421	<i>sylvestre</i>	368
<b>SATYRIUM</b>	33	bifolia	421	<b>SEMPERVIVUM</b>	554
albidum	35	nutans	422	tectorum	554
hircinum	33	verna	421	<b>SENECIO</b>	888
repens	36	<b>SCIRPUS</b>	101	aquaticus	892
viride	34	acicularis	103	<i>erucifolius</i>	891
<b>SAXIFRAGA</b>	494	<i>acicularis</i>	103	jacobæa	891
aizoides	497	<i>carinatus</i>	104	saracenicus	894
<i>autumnalis</i>	498	cæspitosus	102	paludosus	893
cæspitosa	500	fluitans	103	squalidus	890
<i>cæspitosa</i>	500	holoschænus	105	sylvaticus	889
cernua	499	lacustris	104	fenuifolius	890
geum	496	maritimus	107	viscosus	889
granulata	498	multicaulis	101	<i>viscosus</i>	890
hirculus	497	palustris	101	vulgaris	888
hypnoides	501	pauciflorus	102	<b>SERAPIAS</b>	46
moschata	500	<i>romanus</i>	105	ensifolia	49
nivalis	495	setaceus	105	grandiflora	49
palmata	501	sylvaticus	106	<i>lancifolia</i>	49
<i>pyrenaica</i>	500	triqueter	106	latifolia	46
rivularis	499	<b>SCLERANTHUS</b>	502	<i>longifolia</i>	49
stellaris	494	annuus	502	palustris	47
tridactylites	499	perennis	502	rubra	49
umbrosa	496	polycarpus	502	<b>SESLERIA</b>	184
<b>SCABIOSA</b>	239	<i>Scolopendrium</i>		cærulea	184
arvensis	239	ceterach	943	<b>SERRATULA</b>	857
columbaria	240	<b>SCROPHULARIA</b>	682	alpina	853
succisa	239	aquatica	683	<i>arvensis</i>	863
<b>SCANDIX</b>	384	nodosa	683	<i>cynoglossifolia</i>	858
anthriscus	385	scorodonia	682	tinctoria	857

<i>Seseli merum</i>	383	<i>olusatrum</i>	389	<i>ulmaria</i>	567
<b>SHERARDIA</b>	241	<b>SOLANUM</b>	323	<b>SPLACHNUM</b>	970
<i>arvensis</i>	241	<i>dulcamara</i>	323	<i>ampullaceum</i>	972
<b>SIBBALDIA</b>	407	<i>nigrum</i>	324	<i>angustatum</i>	972
<i>procumbens</i>	407	<b>SOLIDAGO</b>	895	<i>breweri</i>	973
<b>SIBTHORPIA</b>	686	<i>cambrica</i>	896	<i>fastigiatum</i>	973
<i>europæa</i>	686	<i>lapponica</i>	897	<i>frælichianum</i>	975
<b>SILENE</b>	508	<i>virg-aurea</i>	895	<i>mnoides</i>	973
<i>acaulis</i>	512	<b>SONCHUS</b>	827	<i>ovatum</i>	973
<i>anglica</i>	508	<i>alpinus</i>	827	<i>sagittifolium</i>	971
<i>anglica</i>	509	<i>arvensis</i>	827	<i>sphæricum</i>	971
<i>armeria</i>	511	<i>asper</i>	829	<i>tenue</i>	974
<i>conica</i>	511	<i>cæruleus</i>	827	<i>urceolatum</i>	974
<i>inflata</i>	507	<i>canadensis</i>	827	<i>vasculosum</i>	971
<i>maritima</i>	510	<i>oleraceus</i>	829	<b>STACHYS</b>	656
<i>noctiflora</i>	512	<i>palustris</i>	823	<i>arvensis</i>	657
<i>nutans</i>	509	<b>SORBUS</b>	562	<i>germanica</i>	657
<i>otites</i>	508	<i>aucuparia</i>	562	<i>palustris</i>	656
<i>quinque-vul-</i>		<i>domestica</i>	563	<i>sylvatica</i>	656
<i>nera</i>	508	<i>hybrida</i>	563	<b>STAPHYLÆA</b>	398
<b>SINAPIS</b>	734	<b>SPARGANIUM</b>	152	<i>pinnata</i>	398
<i>alba</i>	735	<i>erectum</i>	152	<b>STATICE</b>	400
<i>arvensis</i>	734	<i>natans</i>	153	<i>armeria</i>	400
<i>nigra</i>	736	<i>ramosum</i>	152	<i>limonium</i>	401
<b>SISON</b>	376	<i>simplex</i>	153	<i>reticulata</i>	402
<i>amomum</i>	377	<i>simplex na-</i>		<b>STELLARIA</b>	513
<i>inundatum</i>	377	<i>tans</i>	153	<i>cerastoides</i>	517
<i>segetum</i>	377	<b>SPARTIUM</b>	767	<i>dilleniana</i>	517
<i>verticillatum</i>	378	<i>scoparium</i>	767	<i>glauca</i>	516
<b>SISYMBRIUM</b>	717	<b>SPERGULA</b>	535	<i>graminea</i>	515
<i>amphibium</i>	718	<i>arvensis</i>	535	<i>graminea</i>	517
<i>aquaticum</i>	719	<i>laricina</i>	536	<i>holostea</i>	513
<i>irio</i>	721	<i>nodosa</i>	536	<i>media</i>	513
<i>monense</i>	721	<i>pentandra</i>	535	<i>nemorum</i>	513
<i>monense</i>	734	<i>saginoïdes</i>	537	<i>scapigera</i>	515
<i>murale</i>	721	<i>saginoïdes</i>	536	<i>uliginosa</i>	517
<i>nasturtium</i>	717	<i>subulata</i>	536	<i>uliginosa</i>	517
<i>sophia</i>	721	<i>Sphærocarpos</i>		<b>STIPA</b>	216
<i>sylvestre</i>	718	<i>terrestris</i>	1080	<i>pennata</i>	216
<i>tenuifolium</i>	720	<b>SPHAGNUM</b>	961	<b>STRATIOTES</b>	608
<i>terrestre</i>	719	<i>alpinum</i>	962	<i>aloides</i>	608
<b>Sium</b>	375	<i>alpinum</i>	1021	<b>SUBULARIA</b>	698
<i>angustifoli-</i>		<i>arboreum</i>	963	<i>aquatica</i>	698
<i>um</i>	375	<i>arboreum</i>	970	<i>Swartzia</i>	
<i>latifolium</i>	375	<i>palustre</i>	962	<i>capillacea</i>	1018
<i>nodiflorum</i>	376	<b>SPIRÆA</b>	566	<i>inclinata</i>	1023
<i>repens</i>	376	<i>filipendula</i>	567	<b>SWERTIA</b>	353
<b>SMYRNIUM</b>	389	<i>salicifolia</i>	566	<i>perennis</i>	353

<b>SYMPHYTUM</b>	293	<i>cordata</i>	600	<i>ochroleucum</i>	802
<i>officinale</i>	293	<i>europæa</i>	600	<i>officinale</i>	795
<i>patens</i>	294	<i>microphylla</i>	600	<i>ornithopodi-</i>	
<i>tuberosum</i>	294	<i>parvifolia</i>	600	<i>oides</i>	749
<b>TILLEA</b>	233			<i>pratense</i>	800
<b>TAMARIX</b>	398	<i>muscosa</i>	232	<i>pratense hirsut.</i>	749
<i>gallica</i>	399	<i>Tithymulus ver-</i>		<i>procumbens</i>	804
<b>TAMUS</b>	428	<i>rucosus</i>	551	<i>repens</i>	795
<i>communis</i>	428	<b>TOFIELDIA</b>	446	<i>repens hybri-</i>	
<b>TANACETUM</b>	871	<i>palustris</i>	446	<i>dum.</i>	795
<i>vulgare</i>	872	<b>TORDYLIUM</b>	360	<i>scabrum</i>	798
<b>TARGIONIA</b>	784	<i>anthriscus</i>	363	<i>stellatum</i>	803
<i>hypophylla</i>	1080	<i>apulium</i>	361	<i>stellatum</i>	803
<i>sphærocarpus</i>	1080	<i>maximum</i>	360	<i>striatum</i>	798
<b>TAXUS</b>	758	<i>officinale</i>	360	<i>subterraneum</i>	796
<i>baccata</i>	758	<i>nodosum</i>	363	<i>suffocatum</i>	807
<b>Tetraphis</b>		<b>TORMENTILLA</b>	583	<b>TRIGLOCHIN</b>	447
<i>pellucida</i>	980	<i>erecta</i>	584	<i>maritimum</i>	448
<b>TEUCRIUM</b>	635	<i>officinale</i>	583	<i>palustre</i>	447
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Least Rush	429	Makinbay	551	Melilot 795 812
Least Willow	70	Mallow	755	Mercury 341 485
Ledum-leaved Cis-		Many-stalked		Meu 383
tus	603	Club-rush	102	Mezereon 467



Milfoil	51	165	Narrow-leaved	Paddock-pipe	927	
Military Orchis	29		Pepperwort	Paddock-pipe	6	
Milk-Thistle	863		Narrow-leaved	Pagils	298	
Milk Vetch	642		Mint	Painted-cup	668	
Milkwort	338	767	793	Painting-root	288	
Millet	165		Mouse-ear	Pale Hairy Crow-		
Millet-grass	166		Narrow-leaved	foot	621	
Mill-mountain	404		Hairy-rush	Pale Perfoliate		
Milk-weed	368		Narrow Water Plan-	Honeysuckle	314	
Mint	640		tain	Panic	157	
Missel	263		Needle Furze	Parsley-leaved El-		
Misseltoe	263		Nep	der	397	
Mithridate Mus-			Network Willow	Pansies	332	
fard	703		Nettle	Park-leaves	814	
Moneywort	303	687	Nettle-Hemp	Parsley-piert	265	
Mongrel Poppy	594		Night-shade	Parsnep	389	
Moon-flower	905	324		Pasque-flower	612	
Moon-wort	937		Nipplewort	Pea	775	
Moor-berries	462		Nonsuch	Pearly Everlast-		
Moor-grass	100	185	Nottingham Catch-	ing	877	
Moor-wort	463		fly	Pearlwort	279	
Moss-berries	462			Pear Tree	565	
Moschatel	478		Oak Fern	Pease-Everlast-		
Moss-crops	99		Oak Tree	ing	780	
Mother-wort	659		Oat	Peaseling	776	
Mountain Ash	562		Oat-grass	Pellitory	260	
—Avens	587	217		Penny-cress	703	
—Garlic	326		Olive-leaved Wil-	Penny-royal	649	
—Pansies	332		low	Penny-wort	358	
—Rue-			One-berry	Pendulous Sea		
weed	490		Oraché	349	Limegrass	226
Mouse-ear	233	287	Orpine	524	Pepper-grass	934
532 839			Orchard Grass	198	Peppermoss	934
Mouse-tail	409		Orcheston Long	Peppermint	701	
Mud-weed	409		Grass	Perennial Mer-		
Mug-weed	243		Orange-spiked Fox-	cury	485	
Mug-wort	243	875	tail Grass	120	Perennial Flax	403
Mullein	316	320	Orange Hawk-	Periwinkle	339	
Muscovy	751		weed	842	Persicaria	470
Mustard	735		Orange Mint	643	Pestilent-wort	887
Myrtle-flag	427		Orpine	524	Pettigree	94
Myrtle-grass	427		Osier	81	Petty-muguet	248
			Osmond Royal	938	Petty-whin	770
Nail-wort	699		Owler	267	Pheasant's-eye	617
Navelwort	291	523	Ox-eye	905	Pignut	366
Navev	731		Ox-lips	298	Pilcorn	218
Naked-flowering			Ox-tongue	826	Pilewort	618
Crocus	96				Pills	218



Pillwort	934	Quill-wort	935	Rueweed	614
Pimpernel	302 315			Rue Whitlow	
Pink	505	Ragwort	890	grass	500
Pipe-wort	241	Ramping Fumitory	765	Russet Carex	143
Pipperidge-bush	438			Rush Wheat	229
Plantain	253 256	Ranunculus	308	Rupture- }	310 405
Plantain Shore-weed	253	Ranunculus	417	wort	
Pleasant-in-sight	531	Rape	732	Rush	101 105 429
Plowman's Spikenard	883	Raspberry	573	Rush Grass	108
Plum-leaved Willow	68	Ray-grass	223	Rye	227
Plum Tree	558	Redrot	405	Rye Grass	223 227
Pæony	605	Redshanks	233		
Polypody	949 959	Red Willow	59		
Pond-weed	8 272 276	Red Fork-moss	1003	Saffron	95
	470	Reed Canary Grass	155	Sage	24
Poor-man's Pepper	702	Red Horned Poppy	593	Sage of Jerusalem	292
Poplar	466	Red Hemp Nettle	652	Saintfoin	791
Poppy	594	Reed-mace	151	Sallow-thorn	264
Prickwood	259 328	Rest-harrow	772	Saltwort	5
Prickly-separate-headed Carex	119	Rib-grass	255	Samphire	370 902
Prickly unexpanded Rose	570	Ribband Grass	114	Sandwort	518
Prim	10	Rigid Carex	144	Sanicle	21
Primrose	297	Ribwort Plantain	255	Salt-marsh Club-grass	107
Privet	10	Roan Tree	562	Sand Rocket	721
Powdery Sea Heath	345	Rock-cress	712	Safern	258
Primrose Peerless	413	Rocket	546	Satyrion	34
Purple Spurge	547	Rose	569	Sauce-alone	724
— Saxifrage	497	Rose Willow		Saw-wort	857
Purslane	345 441	Rosebay	304	Saxifrage	392 494 500
Purple Bottle Moss	972	Rosemary	489	Scabious	239 317
— Broomrape	549	Roseroot	482	Scorpion-grass	287
Prostrate Dwarf Willow	73	Rosewort	482	Scotch Fir	760
Pyramidal Bugle	683	Round-headed		Scottish Scurvy-grass	306
		Rampion	312	Scottish Lovage	372
Snake Grass	196	Royal Moonwort	938	Scurvy-grass	386 708
Quince-leaved Willow	77	Roman Nettle	261	Sea Colewort	306
Quicken Tree	562	Round-leaved		— Buckthorn	328
Quick-in-hand	333	Mint	640	— Cushion	401
		Round-headed		— Gilliflower	401
		Garlic	326	— Grass	5
		Rough Althæa	754	— Holly	357
		Rough-bordered		— Lavender	401
		Hawkweed	843	— Parsley	372
		Rosemary-leaved		— Rocket	695
		Willow	75	— Radish	737
		Round-eared Willow	76	— Wheat	230
		low		— Wormwood	874

Sea Stock	726	Jointed Rush	431	Snap-dragon	82	677
— Celandine	592	Shoreweed	253	Sneeze-wort		914
— Chamomile	942	Silvery Alpine		Snow-drop		411
— Bent-grass	176	Jungermannia	1077	Snake's-head		418
— Kale	696	Silver-weed	580	Soap-wort		503
— Pea	775	Silky Sand Willow	72	Soft-grass		178
— Matweed	167	Silky Feather-		Solomon's-seal		426
— Reed	167	moss	1041	Sorb		561 563
— Heath	439	Silky Pendulous		Sorrel		445
— Rush	430	Thread-moss	822	Soft Brown Carex		126
— Tassel-grass	278	Silky Heath Fork-		Solid Bulbous		
— Bugloss	293	moss	982	Fumitory		763
— Bindweed	306	Silky-leaved Wil-		Sow-bread		299
— Cotton-weed	871	low	80	Southernwood		873
Seaves	429	Simpler's-joy	638	Sow-bane		342
Seg	119	150 Skerret	375	Sow-thistle		827
Seggram	892	Skull-cap	666	Spatling Poppy		507
Self-heal	668	Sloe Tree	559	Spearwort		619
Scotch Asphodel	447	Slender Buffonia	266	Speedwell		12 20
Scorpion Hyp-		Slender Glaucous		Sperage		424
num	1048	Meadow-grass	195	Spear Mint		641
Sengreen	494	527 Slender Hyp-		Spear Orache		347
Septfoil	584	num	1052	Spider Ophrys		45
Setterwort	628	Slender-leaved		Spiderwort		423
Service Tree	561	Carex	133	Spignel		369 389
Service	502	Slender Bird's-		Spikenard		883
Sheep's-bit	316	foot Trefoil	809	Spinach		341
Shepherd's Nee-		Small-flowered		Spindle-tree		328
die	384	Fumitory	765	Spleenwort		941 950
Shepherd's Purse	707	Smallage	394	Spoonwort		710
Shepherd's Rod	239	Smooth Willow	60	Spring Moss		1024
Shepherd's Staff	239	Small Hartwort	361	Spiked Fescue-		
Shamrock	796	— Reed	167	grass		157
Sessile Bryum	992	— Waterwort	479	Spotted-flowered		
Shrubby Stock	726	Small-flowered		Cistus		602
Shore-weed	253	Hawke's-beard	674	Spreading Hal-		
Shaggy Alpine		Small-leaved		berd-leaved		
Hawkweed	847	Dwarf Willow	74	Orache		347
Sheep's Sorrel	446	Smooth-sheathed		Spreading Narrow-		
Shining Dark-		Hair-grass	179	leaved Orache		347
green Willow	64	Smooth-stalked		Spring-Grass		85
Sharp-leaved Tri-		Beaked Carex	148	Spring Cyclamen		299
androus Willow	60	Smooth-seeded		Spurge		547
Shrubby Samphire	5	Corn Spurrey	428	Spurge Flax		468
— Speedwell	15	Smooth Frank-		Spurge Laurel		463
Sharp-flowered		wort	345	Spurge Olive		467
Jointed Rush	431	Snailshell	812	Spurrey		519 536
Shining-fruited		Snakeweed	470	Spur-wort		241

Squill	421	Swine-cress	711	Tree-mallow	528
Squinancy Berries	336	Swine's-eye	851	Trefoil	528 794 808
Squinancy Wort	242	— Succory	851	True-love	477
Squitch	173	Swamore Tree	458	Tube-root	449
Squitch-grass	173	—	—	Tulip	418
St. Barnaby's	—	Tansy	530	872 Turkey-pod	728
Thistle	918	Tare	779	Turnep	732
Strawberry-flow-	—	Tassel-grass	277	Tutsan	814
ered Cinquefoil	580	Teasel	238	Tway-blade	37 46
Starry-headed	—	Tentwort	946	Tunbridge Gold-	—
Trefoil	803	Thistle	859 806	ilocks	960
Stained-leaved	—	Tall Broom-rape	548	Tufted Vetch	783
Hawkweed	670	Tall Red Mint	646	Tufted Bog Carex	145
Stone Fern	940	Three-flowered	—	Two-leaved Squill	421
Stone Brakes	940	Fescue Grass	200	Two-flowered Lin-	—
Star-grass	6 7	Triangular Club-	—	naea	686
Star of the Earth	256	rush	106	Upright Meadow	—
Star Thistle	918	Tawney-seeded	—	Crowfoot	621
Starwort	6 895	Cow Parsley	304	— Marsh Bed-	—
Stitchwort	279 513	low	65	straw	246
St. John's-wort	815	Thin-leaved Wil-	—	Upright Spear-	—
Stockbill	750	low	67	leaved Orache	347
Stone-crop	524	Triangular Club-	—	Urn-bearing Hair-	—
Stone Parsley	377	moss	106	moss	979
Stonewort 2 3 4	377	Tawny Rush-	—	—	—
St. Peter's-wort	815	grass	112	Valerian	89 306
Strap-wort	399	Toad Rush	433	Variegated Mint	513
Strawberry Tree	490	Tine Tare	789	Varnished Willow	47
Strawberry	578	855 Treacle Worm-	—	Veiny-leaved Wil-	—
Succory	827	seed	724	low	68
Suffolk-grass	189	Tamarisk Jun-	1074	Velvet-leaf	757
Sulphur-wort 369 380	—	germanica	321	Venus-comb	385
Sundew	405	Thorn Apple	359	Venus-looking	—
Summer Snow-	—	Thrift	401	glass	312
Bake	412	Thoroughwax	450	Vernal Grass	85
Subterraneous	—	Thrinwort	309	Vervain	638
Trefoil	796	Throat-wort	661	Vetch	776 786
Suffocated Tre-	—	Thyme	159	Vetchling	777 779
foil	807	Timothy-grass	679	Vine (wild)	93
Sweet Cyperus	109	Toad-flax	339	Violet	329 332
— Gale	269	Toothwort	675	Viper-grass	296
— Cicely	384	Tornet	384	Virgin's-bower	614
— Briar	572	Touch-me-not	333	Violet-horned	—
— Fern	384	Tower-Mustard	730	Poppy	475
— Flax	427	Traveller's-joy	614	Viper's-Bugloss	296
— William	504	Trailing Tormen-	—	—	—
— Cameline	694	til	585	Wake-robin	611
— Willow	63	—	—	—	—



Wall Cress	728	Welch Sorrel	445	Winter-weed	19
— Flower	725	Wheat-grass	229	White Willow	82
— Penny-wort	523	Whin	770	Wild Vine	93
— Germander	636	White-beam Tree	560	Woad	545 607
— Pepper	524	White-bottle	507	Wolf's-bane	903
— Rue	946	White One-flowered		Wolf's-claw	931
— Wort	396	Daffodil	413	Woodbine	315
Warty-fruited		White-rot	358	Woodroof	242
— Bedstraw	247	White-thorn	501	Wood-Sage	636
Wart-wort	556	White Willow	82	Wood Sorrel	523
Warty Spurge	550	White Viper's Bn-		— Wood-waxen	769
Water Agrimony	869	— gloss	296	Worm-seed	722
— Aloes	609	White Welch Wil-		Worm-wood	874
— Avena	586	— low	62	Woundwort	657 896
— Betony	681	White-flowered		Wyamote	754
— Can	599	Bush-grass	112	Woody Night-	
— Chickweed	428	Whitlow-grass	698	— shade	324
— Cress	717	Whorled Bryum	805	Wood Cow-wheat	536
— Dock	442	Whortle-berries	460	Wood Reed	221
— Elder	396	Wild Amaranth	232	Wrinkled Wil-	
— Gladiole	313	Wild Briar	572	— low	70
— Hemlock	381	— Celery	309	Wood Anemone	612
— Hemp	870	— Climber	614	Wood Rush	436
— Lily	300 599	— Madder	251	Yarrow	915
— Milfoil	22 483	Wilding	566	Yellowish Feather-	
— Moss	967	Wild Parsley	368	— moss	1039
— Parsnep	375	— Pear	560	Yellow Fumi-	
— Pepper	471	— Raddish	737	— tory	764
— Plantain	450	— Rocket	720	— Rattle	670
— Purslane	346	Wild Tansey	580	— Wort	460
— Raddish	718	— Williams	531	— Weed	546
— Rocket	718	Willow	57 83	— Balsam	333
— Sallow	77	Willow-herb	302 455	— Marsh	
— Speedwell	14	— 541 666		— Dock	443
— Trefoil	300	Wind-berries	460	— Violet	332
— Violet	301	Winter Cresses	723	— Rocket	723
— Yarrow	301	Winter-green	452 492	— Cow-	
Waved Feather-		Winter Rocket	723	— wheat	536
— moss	1040	Wich Elm	352	— Willow	66
Way-bennet	227	Witch Hazel	353	— Starry Fea-	
Way-bread	253	Withered-pointed		— ther-moss	1036
Way-faring-tree	395	Willow	78	Yew Tree	758
Weeping Birch	268	Whortle-leaved		Zig-zag Meadow-	
Welch Bistort	475	Willow	68	— grass	188
Welch Golden-		Willow-leaved			
— rod	897	Spiraea	567		













